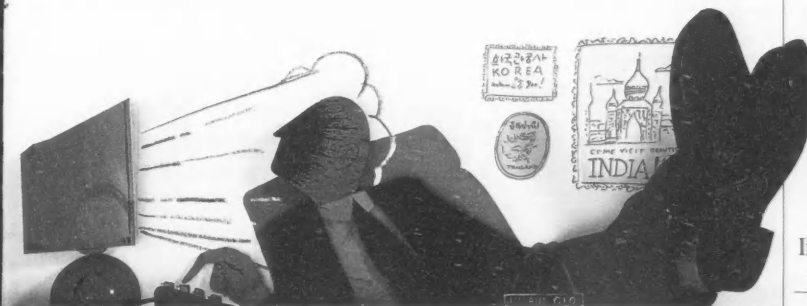


COMPUTERWORLD

THE VOICE OF IT MANAGEMENT • WWW.COMPUTERWORLD.COM

JULY 12, 2004 • VOL. 38 • NO. 28 • \$5/COPY



DAVE WHOLESEN

E-mail Glitch Exposes Flaw In Privacy Law

Inadvertent release of county employee data to Swedish company leads to California inquiry

BY DAN VERTON

IT officials in Contra Costa County, Calif., last week launched an investigation into how hundreds of internal e-mails that contained private employee data ended up in the in-box of a Swedish company. And now legal analysts say the incident has revealed major weaknesses in California's landmark privacy law.

The investigation was launched after *Computerworld* notified the county on July 6 that Robert Carlesten, managing director of Internet company Ord&Bild AB in Karlstad, Sweden, had produced dozens of e-mails that he said had been arriving at his Internet.ac domain regularly for the past two years. Carlesten said he responded to the senders of the e-mails

on multiple occasions to inform them of the problem but never received a reply.

In addition to a deluge of administrative communications from the county's Department of Information Technology and its human resources director, the e-mails contained detailed discussions and attachments related to the

INVESTIGATIVE REPORT

payroll files for the county's Superior Court as well as current and former employee benefits. Many of the e-mails contain the names, employee ID numbers and benefits information of Superior Court commissioners and other workers. *Computerworld* broke the story on its Web site on July 6 [QuickLink 47999].

Tom Whittington, CIO for the Contra Costa County government, said he was aware of the problem. *Privacy Law*, page 45

Page 31 Outsourcing is fraught with political risks, from employee angst to customer dissatisfaction and PR nightmares. Julia King explains how to manage or even prevent the backlash.

DamageControl

Australian Firm Wrestles With ERP Delays, \$11.5M Overrun

Problems lead to IT overhaul; PeopleSoft could face legal action

BY MARC L. SONGINI

Problems with the installation of an ERP system at Australia-based Crane Group Ltd. have led to an estimated cost overrun of \$11.5 million and a reor-

ganization of the company's IT operations. The difficulties may also lead to financial claims against PeopleSoft Inc., according to Crane officials.

No legal proceedings have been started against PeopleSoft, a Crane spokeswoman said last week. But she added that the company is exploring all options because the prob-

lems and delays on the ERP project caused "quite a disruption to Crane's business over the last couple of years."

The spokeswoman said Crane has spent an estimated \$49 million (U.S.) on the project, which began in early 2001 and was originally due to be completed last year. She declined to specify the nature of the problems, saying only that the rollout has been difficult and that Crane and PeopleSoft are engaged in discussions about the project.

Crane, which expects to report revenue of about \$1.5 billion for the fiscal year that ended June 30, makes prod-

ERP Delays, page 45

\$B*88JFT*****CAR-RT LOT**8-052
#0234939/CB/0# C42004280 001 14530
75

PROQUEST

PO BOX 984

ANN ARBOR MI 48106-0984

27-6

IT by Committee



SPECIAL REPORT

IT governance and steering committees are winning adherents such as Cathy Brune, CTO at Allstate Insurance. But recent studies indicate that many companies remain holdouts. Thomas Hoffman reports on the adoption of formal IT governance processes. PAGE 6

INSIDE PeopleSoft warns of a Q2 revenue shortfall - and it's not the only software vendor to do so. Page 10

SHORTLIST
YOUR
SHORTLIST.



The ultra reliable IBM eServer xSeries 365 system – with powerful Intel® Xeon™ processors – can make your work, and IT selection process, easier. With three levels of memory protection and a comprehensive monitoring of key components, it's all about uptime. So you get outstanding reliability when running mission-critical ERP, collaboration and database applications. The works. Management is easier, too. You can have around-the-clock remote access, on demand. And system status can be available even when powered off. For more on highly available, manageable xSeries servers, go to **ibm.com/eserver/advantage**

5 reasons more and more businesses are turning to IBM eServer™ xSeries® systems with Intel Xeon processors.

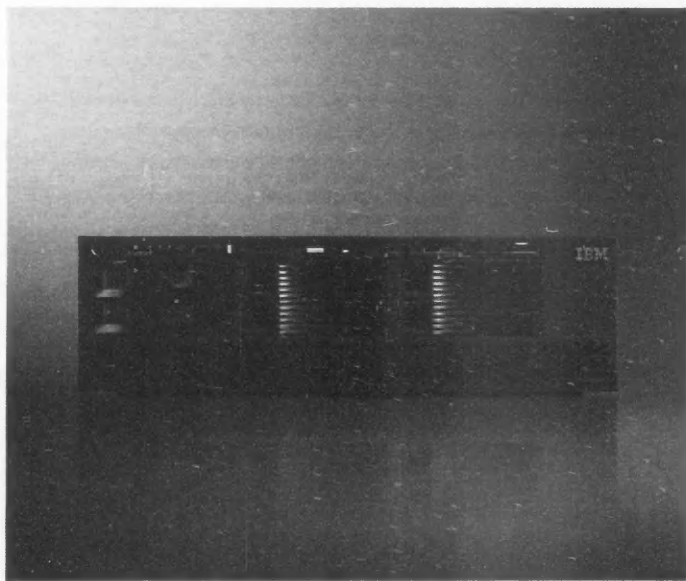
Scale 1-16 way with select models. Pay as you grow.

IBM Director systems management.

Linux-ready through the entire line.

Mainframe-inspired technologies.

24/7/365 optional onsite hardware support.¹



@server®

The easy choice. Dependability.
IBM eServer xSeries 365 system.

*Additional charges apply. Standard support includes next business-day response in some countries. IBM, the e-business logo, eServer, the eServer logo and xSeries are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. Intel, Intel Inside, the Intel Inside logo and Intel Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other company, product and service names may be trademarks or service marks of others. © 2004 IBM Corporation. All rights reserved.



Goodbye Hackers

The right management should do more than just protect.
It should also enable.

eTrust™ Security Management Software

With eTrust security management software, your information isn't just safeguarded from internal and external threats. We provide authorized customers, partners, and employees with appropriate access that can help your business grow. In addition to securing data, eTrust also provides a single view of your security environment, so you can make real-time decisions based on comprehensive information. If you're looking for ways to minimize risk while maximizing your potential, or to get a white paper, go to ca.com/security.



Computer Associates®

© 2003 Computer Associates International, Inc. (CAI). All rights reserved.



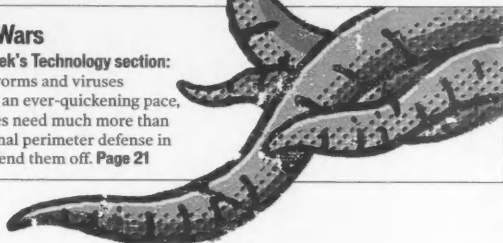
Hello Customers

CONTENTS

07.12.04

Worm Wars

In this week's Technology section: As new worms and viruses appear at an ever-quicken pace, companies need much more than a traditional perimeter defense in order to fend them off. **Page 21**



The Coming Robot Revolution

Also in this week's Technology section: After spending decades mostly in factories, robots will begin playing roles in homes and offices, experts say. **Page 26**



NEWS

IT by Committee

SPECIAL REPORT IT governance committees vary in their approaches, and many companies don't involve their top executives - or even have such panels. **Page 6**

MIT research finds a correlation between good governance and higher profits. **Page 6**

IT executives say Sarbanes-Oxley isn't a big factor in their IT governance efforts. **Page 7**

- 10 **Q2 software sales slump** as spending by U.S. users dips in June.
- 10 **SAP and MySQL prepare** an upgrade of the MaxDB open-source database.
- 12 **Q&A: Sun's John Loiacono** discusses plans to move Solaris to an open-source model.
- 12 **Microsoft gives** users more options for support through its channel partners.
- 14 **BearingPoint boosts** China's standing as a possible offshore outsourcing venue.
- 14 **The BBC awards Siemens** a \$3.7 billion IT contract.
- 16 **E-voting takes a hit** from a California judge.
- 16 **The Pentagon's IT problems** have wasted billions of taxpayer dollars, the GAO says.

TECHNOLOGY

24 Case Study: Wireless CRM Takes to the Field. Pitney Bowes' new wireless field service system provides a wider wireless coverage area and more access to customer data.

25 Simplifying NAS Management. More companies are choosing virtualization technology to consolidate management of multiple network-attached storage systems.

28 Security Manager's Journal: Four Steps to a Secure Budget. Our new columnist outlines a strategy for convincing the CFO to fund IT security projects.

MANAGEMENT

31 Damage Control. Backlash over offshore outsourcing has triggered productivity and revenue losses. Here's how to control the damage.

34 Managing 'Real' Risks. Risk management is an idea whose time has finally come, says Cutter Consortium analyst and author Tom DeMarco. He explains how to embrace risk and reap the rewards.

35 Q&A: Moving Targets. Companies go through innovation stages, so IT needs to provide the right help at the right time, says Geoffrey A. Moore.

36 Career Watch. How to land an IT job in today's market. Plus, burning the midnight oil in Britain, and hot summer reading for IT execs.

OPINIONS

8 On the Mark: Mark Hall writes that a movement is afoot to get you to dump all of your proprietary Unix hardware.

18 Maryfran Johnson says decisions to send IT work offshore will remain controversial for a while, but better communication can help.

18 Michael H. Hugos looks at five key skills shared by all successful systems designers.

19 Thornton A. May sees the keys to IT success in the things we say, think and do.

29 Tommy Peterson warns: If you thought pregnant chads in 2000 were bad, wait until you see what a determined hacker could do to the democratic process this fall.

38 Bart Perkins thinks that, rather than engaging in "desperation outsourcing," companies are better off investing in a sound project to bring a broken IT shop back to life.

46 Frankly Speaking: Frank Hayes wonders what Contra Costa County, Calif., could have done to keep sensitive e-mail from going astray. Not much, he figures.

DEPARTMENTS/RESOURCES

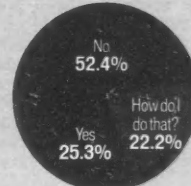
At Deadline Briefs	8
News Briefs	14
Letters	19
IT Careers	39
Company Index	44
How to Contact CW	44
Shark Tank	46

ONLINE

WWW.COMPUTERWORLD.COM

QuickPoll Results

Have you ever used someone else's private wireless network without their knowledge?



Note: Numbers don't add up to 100% due to rounding.

Take this week's QuickPoll at www.computerworld.com.

SOURCE: COMPUTERWORLD.COM NONSCIENTIFIC SURVEY, 454 VOTES

How to Launch an Internet Use Policy

SECURITY: Companies can benefit in a number of ways if they set rules for employee Internet use. Jeff Hughes of Blue Coat Systems tells you how to do it. **QuickLink 47882**

Tips for Successful Server Recoveries

DISASTER RECOVERY: Data loss on a server can affect an entire company, so quick and painless restoration is crucial. Jim Reinert of Ontrack Data Recovery offers his advice. **QuickLink 47595**

Implementation Is What Matters

IT MANAGEMENT: Security consultant Ben Rothke says that *Does IT Matter?* author Nicholas G. Carr is wrong to call IT a commodity. **QuickLink 47801**

What's a QuickLink?

Throughout each issue of *Computerworld*, you'll see five-digit QuickLink codes pointing to related content on our Web site. Also, at the end of each story, a QuickLink to that story online facilitates sharing it with colleagues. Just enter any of those codes into the QuickLink box, which is at the top of every page on our site.

ONLINE DEPARTMENTS

- Breaking News **QuickLink #1510**
- Newsletter Subscriptions **QuickLink #1430**
- Knowledge Centers **QuickLink #2570**
- The Online Store **QuickLink #2420**

IT Governance Is On the Hot Seat

Committees of IT and business execs oversee spending at some companies, but surveys find lots of skeptics. By Thomas Hoffman

BEFORE Allstate Insurance Co. formed a capital spending committee with IT governance responsibilities about 18 months ago, the process of prioritizing IT projects typically was decided by "whoever spoke the loudest or whoever had the biggest checkbook," said Chief Technology Officer Cathy Brune.

Now Brune and some top Allstate executives, including the chairman and CEO and the chief financial officer, collectively decide how to prioritize IT initiatives based on business needs. "They help me decide where to spend our money," Brune said, noting that the new approach to IT governance gives the business executives a better understanding of the IT spending process.

IT governance committees like the one at Allstate are becoming more commonplace as companies aim to better align their IT operations with business goals. The idea behind such committees is to bring together key IT and business managers and give them joint responsibility for making decisions about technology priorities and investments.

But the specific IT governance techniques being used by different companies vary widely, according to more than a dozen IT managers, researchers and academics interviewed for this article. Moreover, many companies have yet to adopt governance processes that include direct input about IT from CEOs, other senior executives and board members — a situation

that some analysts think could hamper efforts to align IT and business.

"Top management is still not involved enough yet," said Gary Hardy, technical coordinator at the IT Governance Institute (ITGI) in Rolling Meadows, Ill. CEOs and other high-level executives often recognize IT's importance to their companies, he said, "but the CIO still tends to drive IT governance initiatives more than top management."

The use of IT governance committees is by no means

universal. In a survey due for release this month that was conducted for the ITGI by PricewaterhouseCoopers, 76% of the 335 CEOs and CIOs who responded said they're aware of IT problems that could be resolved if they had a formal governance framework. But 42% said they have no plans to create IT governance programs involving executive-level steering and board-level strategy committees.

In a recent online survey of about 200 IT executives and CFOs at companies in North America and Europe, Meta Group Inc. found that less than 20% of the respondents have set up corporate or IT governance committees with formal memberships and charters [QuickLink 47304]. Meanwhile, analysts have said that they're aware of only a small number of companies with IT oversight panels that include members of their boards of directors [QuickLink 46892].

Even companies with IT steering committees may not be fully prepared from a governance standpoint if the pan-



“At a high level, we look at what business needs to accomplish and how we prioritize project deliverables.”

JAY GARDNER, CIO, BMC SOFTWARE

els include business unit managers and department heads but not top corporate executives, said Rob Austin, a fellow at Cutter Consortium in Arlington, Mass., and a professor at Harvard Business School.

Such committees "don't address the overarching governance problem at an executive level," Austin said, adding that

MIT Researchers Tie Good Governance to Higher Profits

Companies that don't have formal IT governance committees might want to take heed of the following: Businesses with superior governance practices generate 20% greater profits on average than other companies that share similar goals of making IT spending more effective and better aligning technology resources with business needs, according to an MIT study.

The study, conducted by the Center for Information Systems Research (CISR) at MIT's Sloan School of Management, examined IT governance processes and profitability at 256 companies from 2001 to mid-2003. The findings were published last month in a book titled *IT Governance: How Top Performers Manage IT Decision Rights for Superior Re-*

sults (Harvard Business School Press).

CISR Director Peter Weill, who helped lead the study and co-authored the book, said companies with effective IT governance tend to have joint decision-making between business and IT managers on prioritizing technology projects and other key issues.

But Weill noted that companies with world-class IT governance techniques, such as State Street, United Parcel Service Inc. and insurer and financial services firm USAA, often use completely different approaches. "I think the lesson here is that you have to have governance tailored to what you're trying to achieve," he said.

State Street CIO Joe Antonellis said he hasn't done the

kind of financial-return analysis that the CISR did to gauge the effectiveness of the bank's IT governance model. But he thinks State Street's governance processes are helping the company spend its IT budget more effectively and enabling it to earmark more money for projects that support business initiatives aimed at increasing revenue.

The bank's overall IT costs have remained flat since Antonellis became CIO, while its IT workforce is 23% smaller. In addition, State Street now invests about 30% of its IT spending on new-revenue projects and uses the other 70% for day-to-day IT operations, Antonellis said. That's an improvement over the 25%/75% spending split that he inherited. Antonellis added that his goal is to push IT spending related to new revenue opportunities to 40% of the overall budget by the end of next year.

— Thomas Hoffman

CREDITS

Writer: Thomas Hoffman
Editor: Craig Stedman
Designer: Julie Quinn

Reasons for Not Implementing Formal IT Governance Processes

Too expensive	28%
Lack of required skills	20%
Formal solutions won't work	17%
No IT problems to fix	11%
Company is too small	11%
Too difficult to implement	7%
Others	29%

Base: 46 CEOs and CIOs surveyed as part of a wider study; multiple responses allowed.
SOURCE: IT GOVERNANCE INSTITUTE, ROLLING MEADOWS, ILL., AND PRICE WATERHOUSE COOPERS, NEW YORK

boards of directors also need to be involved in overseeing IT. "It seems to me that there's a train wreck due sometime ... where inattentive boards are not going to know what hit them when they have an IT disaster," he said.

At Allstate, business units are responsible for funding maintenance and upgrades of their own applications. But Brune said IT spending is managed at a group level, and money is moved around between units as needed. The capital allocation committee, which also includes representatives from the Northbrook, Ill.-based insurer's two main operating units, has to approve all IT projects budgeted at more than \$5 million, or \$25 million over five years.

Effective IT governance "makes you more nimble about what you do," Brune said, adding that Allstate's approach helps avoid political infighting that can slow down decision-making.

Other companies have IT governance goals that are similar to the ones espoused by Brune. But they have adopted somewhat different tactics for achieving their objectives.

Earlier this year, Cleveland-based KeyCorp formed a technology advisory board that includes CTO Robert Rickert, the bank's CFO and the head of each business unit. The board meets regularly to prioritize and manage the \$100 million in IT project spending planned for this year, said Bob

Dutile, an executive vice president in the company's Key Technology Services Group.

In the past, IT governance at KeyCorp consisted of the bank's CFO measuring IT spending by line of business, Dutile said. By last year, the prioritization of IT projects was done "more ad hoc at the corporate level," he noted. The more structured governance process now in place ensures that KeyCorp has an

explicit approach for allocating IT funding, Dutile said.

When Jay Gardner became CIO at BMC Software Inc. three years ago, he discovered that the Houston-based software vendor had 128 IT projects in progress, many of which had no business owners or return-on-investment criteria attached to them. Gardner spurred the creation of an informal committee to oversee IT decision-making, and BMC made the group a formal entity last September.

The IT executive board meets at least monthly, but between February and May, it met every two weeks because "we had a lot of projects to prioritize," Gardner said. The board includes senior managers from each department, a representative from BMC's international operations and its chief accounting officer. Gardner and BMC's director of IT operations are also members. "At a high level, we look at what the business needs to accomplish and how we prioritize project deliverables," said Gardner. The members of the board "not only make the decisions, but they come with their checkbooks," he added.

Each of the six business units at Wyeth, a maker of pharmaceuticals and other health care products, has its own IT steering committee with a liaison from the IT department. But some large projects are vetted by an executive-level committee that includes CIO Bruce Fadern, plus Madison, N.J.-based Wyeth's CEO and CFO and the managers of its six business units.

For example, if Wyeth's consumer health care products group has 25 IT projects plotted out over the course of a year, the executive committee will monitor the largest two or three, Fadern said. Even so, much of the accountability for the IT projects resides within the business units themselves.

"What we've done is put the prioritization of IT investments in the hands of our business managers," Fadern said. "To think that senior management can sit in a committee meeting and rank proj-

IT Execs Downplay Role of Sarbanes-Oxley in Governance

The relatively low levels of interest in creating IT governance committees found by the ITGI and Meta Group surveys are alarming, considering the heightened emphasis that the Sarbanes-Oxley Act has placed on overall corporate governance, said Adrian Bowles, director of education and research at the IT Compliance Institute in Seattle.

Bowles said he expects attitudes to change as the deadlines for complying with the financial reporting law begin to draw near. "Certainly, more companies are trying to get serious about IT governance, whereas four or five years ago, not a lot of people were talking about it," he said. "As we get into crunch time for Sarbanes-Oxley [compliance], we're going to see more formal evidence of IT governance."

But none of the IT executives interviewed for this story said Sarbanes-Oxley played an instrumental role in driving their companies' IT governance efforts. Instead, they cited factors such as a desire to better align IT strategies with the needs of business units.

MasterCard International

Inc. has an IT steering committee that meets every six weeks or so and includes IT representatives and business managers from each of the four regions where the Purchase, N.Y.-based company operates. The committee categorizes proposed IT projects and then ranks them in importance based on business needs and projected paybacks, said James Whalen, senior vice president of finance and administration at MasterCard's global technology organization.

MasterCard has changed from being a member-owned company to one that's publicly traded, increasing the amount of financial disclosures it needs to make. But Sarbanes-Oxley "isn't a primary driver" for its IT governance efforts, Whalen said. IT governance would have become more important at MasterCard even if the law never came into play, according to Whalen.

"I think this is tangential [to Sarbanes-Oxley], because our investment decisions are significantly more transparent and require a significant amount of communications," he said.

— Thomas Hoffman

ects in order just isn't practical. They might know the top five criteria for a project, but not beyond that."

One of the companies that analysts cite as a leader in IT governance is State Street Corp., a financial services firm in Boston. Nearly three years ago, State Street formed an IT executive council that currently includes CIO Joe Antonellis, the company's CEO, its vice chairman and the heads of its three business units. The group meets every six weeks to review IT spending levels and look at how State Street's 3,200 IT workers are distributed among projects, Antonellis said.

When Antonellis became CIO 18 months ago, he formed

an office of IT strategy and governance within State Street's IT department. The strategy and governance office, which is run by his chief of staff, sets internal technical standards and oversees everything from IT architecture decisions to technology risk management procedures.

Despite State Street's two-pronged strategy for governing IT, Antonellis said the firm continues to wrestle with thorny issues such as how to migrate the governance model to its overseas divisions.

"That's a challenge," he said, adding that State Street hopes to ease the process by standardizing globally on development tools from IBM's Rational Software unit. **C 48025**

A Governance Framework

IT STRATEGY COMMITTEE

- Provides insight and advice to the board of directors on IT topics

- Gives direction on IT strategy to senior management

- Can include board members, key executives and external IT experts

IT STEERING COMMITTEE

- Makes decisions on IT spending levels, project plans and other operations issues

- Oversees day-to-day management of projects and the delivery of IT services to end users

- Can include senior executives, business unit leaders and IT managers

SOURCE: IT GOVERNANCE INSTITUTE, ROLLING MEADOWS, ILL.

AT DEADLINE

Sprint Taps IBM For More IT Work

Sprint Corp. announced a five-year IT services deal with IBM that expands the scope of an initial agreement the two companies signed in September. Under the new contract, which is valued at more than \$400 million, IBM Global Services will take over application development and maintenance on some Sprint systems. About 1,000 IT workers will transfer to IBM as part of the deal.

SAP Says It Will Top Q2 Forecast

SAP AG said it will report second-quarter revenue of about \$2.2 billion, up 9% from the year-earlier level and slightly more than financial analysts had projected. Software license sales should total \$614 million, a 15% increase over last year's second quarter. SAP's showing is in contrast to warnings by other software vendors that their results will be lower than expected (see story, page 10).

Mozilla Issues Fix To Windows Users

The Mozilla Foundation issued a software patch designed to plug a security hole that could affect users who run its open-source Mozilla Application Suite, Firefox browser and Thunderbird e-mail client on Windows systems. The patch disables use of the "shell:" external protocol handler, which attackers could exploit to run malicious code. Users of Linux and Macintosh systems aren't at risk, the foundation said.

Short Takes

A California judge approved the \$1.1 billion settlement of a class-action lawsuit filed in that state against MICROSOFT CORP. over its pricing policies [QuickLink 35711]....PEOPLESOFT INC. upgraded the manufacturing asset management module in its EnterpriseOne line of business applications for midsized users.

ON THE MARK



Reach Path to 'Linux Nirvana'...

...with archiving tool for data center. That's the message from major software vendors that have jumped on the information life-cycle management bandwagon. SAP AG will release an ILM product, possibly this summer, based on technology from OuterBay Technologies Inc. And Sybase Inc. in Dublin, Calif., has

just begun offering OuterBay's ILM technology, joining PeopleSoft Inc., Oracle Corp., EMC Corp. and other companies anxious to get users to migrate their dusty data from high-priced proprietary servers to cheaper Linux machines. But Michael Howard, CEO of Cupertino, Calif.-based OuterBay, thinks these software giants want to prod you toward "a Linux nirvana," where even your pricey production machines, not just the ones with archived data, are low-cost, commodity Linux boxes. Howard claims the software vendors are discovering that their products run



HOWARD says Linux is plenty fast enough.

plenty fast on Linux systems once the old data has been moved elsewhere, so they're encouraging you to dump virtually all of your proprietary Unix

systems. "For software vendors, every dollar you take away from hardware procurement leaves you more to spend on software," he says. A diabolical plot? Or a gift from heaven?

Linux Lovers Should Forget Feud With ...

... Windows and think above and below the operating system.

That's the advice from Tim O'Reilly, CEO of O'Reilly Media Inc. in Sebastopol, Calif. The publisher of open-source books and the impresario of the O'Reilly Open Source Convention being held later this month in Portland, Ore., argues that by emphasizing the operating system struggle, open-source zealots overlook opportunities to build successful business alternatives to proprietary technologies. He points to Google, Amazon.com and other successful Internet businesses that are built on top of Linux, as well as Indianapolis-based hardware maker Progeny Linux

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY GOSSIP BY MARK HALL

Systems Inc., which builds its business below the operating system. "A lot of the Linux community is fixated on beating Microsoft," he says. "But value is moving up and down the stack, as these companies show." In contrast to what was written here two weeks ago [QuickLink 47772], O'Reilly thinks the desktop opportunities for Linux are alive and well. Especially with Novell Inc.'s purchase of SUSE and Ximian, which enables the Orem, Utah-based company's brand-name recognition in the enterprise to be used as ammo in the desktop wars.

IT Departments Worry That Chargeback ...

... systems "will expose them much more internally," says

Richard Simons, chief operating officer at MBG in New York. Once internal customers learn the minutiae of how much IT is charging them, they have critical data by which to measure IT against external offerings. However, the greater the detail, Simons argues, the less time CIOs will waste in acrimonious meetings justifying budget assessments. "Breaking out the costs shows the value users get," he says. "Visibility is what helps keep IT honest." MBG offers tools for detailing everything from IT to telecommunications charges. In the latter category, telcos have cut delivery costs nearly to the bone, so they're looking to automate on business processes using XML, he says.

... workflow in a high-volume environment with Interchange,

Automate Multisource Information ...

... workflow in a high-volume environment with Interchange,

a new product from Captaris Inc. in Bellevue, Wash. Set to ship the first week of September, .Net-based Interchange takes vast numbers of files, like e-mails, faxes and spreadsheets, and routes them to the appropriate recipients, tracks their progress, handles exceptions and delivers reports to management on workflow status. Pricing will start at \$20,000.

GIS Data Shifts IT Landscape ...

... for tools in the field. Today's modern civil engineers plant stakes equipped with global positioning systems, and this year Caterpillar Inc. made GPS standard on all of its earth-moving equipment, observes Chris Bradshaw, vice president of the information solutions divisions at Autodesk Inc. in San Rafael, Calif. He says these are only some of the changes occurring in geographic information systems that are forcing IT to rethink the way it outfits systems deployed in the field as well as the way the data gets processed back in the data center. First, Bradshaw points out, real-time information isn't necessary for GIS users who carry laptops in the field — a daily update back at the office works fine. That means less concern about wireless problems. Another point that Bradshaw raises is the lack of a standard for storing GIS data. "Oracle is way ahead of the game," but only on the high end, he says. If an industry standard does appear, Bradshaw says Autodesk will support it. In the meantime, buy lots of disk drives; GIS data eats them like candy.



BRADSHAW sees a shift for GIS data.

Q 48069

Network Knowledge At Your Fingertips



Automated Networked Storage: The foundation for Information Lifecycle Management EMC Corporation

Learn how automated networked storage can maximize the value of your Information lifecycle management strategy. Gain tools and techniques to turn even the most chaotic, heterogeneous storage environment into a well-integrated, centralized control center that directly supports your business policies. Understand open storage management and its impact on ILM.

www.nwfusion.com/go/emc

Applications for Peak Performance Concord Communications

Companies rely on their business applications to help them interact with customers, ensure employee productivity, and drive revenue. Assuring that these applications are performing appropriately for the end user is critical. Learn how your company can implement a business applications management solution, monitor applications, and derive benefits from the information gathered.

www.nwfusion.com/go/conc

IT Asset and Service Management in the Real World Computer Associates

Today technology is no longer viewed as a utility, but as a strategic weapon for business success. IT organizations understand the pivotal role IT asset management and service management practices have on attaining business objectives. Tune in to this webcast to learn more.

www.nwfusion.com/go/ca

Strategies for Optimal Network-Critical Physical Infrastructure APC

Three top industry experts discuss the exciting capabilities of new approaches to network-critical physical infrastructure, the foundation of highly available networks. Learn what density and capacity you should design for, what to expect from standardization, and how to minimize upfront and operating costs. Attain the unattainable: a highly available, flexible, lower cost IT installation.

www.nwfusion.com/go/apc

Covering vital topics like security, applications, and wireless, our webcasts are highly focused, single-topic briefings from experts in technology—streamed direct to your desktop.

Additional featured webcasts include:

Print Management: A Business Imperative
HP

When the Network Means Business: Delivering Results with IP and Performance Management
Lucent

Wireless Under Wraps: Securing New Forms of Remote Access
iPass

Take Control of Application Performance
Altaworks

The Evolution of the Virtual Data Center
F5

The Wireless Connection: New Optimism. New Choices.
PC Connection

Making Sense of WAN Service Options
Qwest

Organize Your Business for Success: Documenting Business and IT
netViz - A Concord Company

Sign up for our webcast newsletter, visit:
www.nwfusion.com/go/pa1

Always on. Always current. Always FREE!

TO SELECT FROM OUR COMPLETE LIST OF ON-DEMAND WEBCASTS, VISIT: www.nwfusion.com/ITWPR

Purchasing Delays Cause Software Sales Shortfalls

Vendors miss second-quarter targets, blame spending drop-off in U.S. in June

BY LUCAS MEARIAN
AND MARC L. SONGINI

SIX TOP SOFTWARE vendors warned last week that they will report lower-than-projected revenues for the second quarter, blaming a slowdown in spending by U.S. customers last month.

PeopleSoft Inc., Computer Associates International Inc., Siebel Systems Inc., Veritas Software Corp., BMC Software Inc. and FileNet Corp. all said they missed their revenue targets for the quarter. The cascade of announcements followed a similar warning from Sybase Inc. on July 1.

Sybase cited execution problems in its North American sales unit, and PeopleSoft pointed a finger at the fallout from the trial in which the U.S. Department of Justice is trying to block Oracle Corp.'s hostile takeover bid for the company. But a common thread among all seven vendors was that expected sales didn't materialize in the U.S. in June.

For example, Mountain View, Calif.-based Veritas said

that sales of its storage management software met expectations in most of Europe and the Asia-Pacific region. But the sales in those areas were offset by a late drop-off in purchases by U.S. customers. "At the end of the June quarter, our anticipated order flow weakened," said Veritas CEO Gary Bloom in a statement.

Houston-based BMC said it signed just nine software licensing deals worth more than \$1 million each during the quarter, the first in its 2005 fiscal year. In comparison,

BMC inked 16 deals that topped the \$1 million mark in the same quarter a year ago.

Some analysts said the widespread dip in sales is good news for users because it should increase competition and further drive down software prices. Others called it an indication that the long-awaited recovery in IT spending is already sputtering.

For some users, the recovery hadn't even begun. "I haven't seen any increase in spending on our end," said Matt Fuoco, director of network services at the University of Kansas Medical Center in Kansas City. "People are asking more questions about the

Q2 Misses		
	EXPECTED SALES	REVISED FIGURES
CA	\$865M-\$885M	\$830M-\$850M
PeopleSoft	\$675M-\$690M	\$655M-\$665M
Veritas	\$490M-\$505M	\$475M-\$485M
BMC	\$345M-\$355M	\$318M-\$328M
Siebel	\$353M	\$301M
Sybase	\$199M	\$168M-\$192M
FileNet	\$100M	\$93M-\$95M

spending that's going on." Fuoco added that there is still plenty of economic uncertainty, which is keeping IT spending flat at the medical facility.

Jim Prevo, CIO at Green Mountain Coffee Roasters Inc. in Waterbury, Vt., said many companies could still be digesting software purchases they made in prior years. "Certainly, all of us are focused on getting more out of what we

have already paid for, rather than writing checks for new software," said Prevo, who runs PeopleSoft's applications.

"Companies are still reluctant to make major software purchases," said John Moore, an analyst at ARC Advisory Group Inc. in Dedham, Mass. He predicted that there won't be any big uptick in sales until after the November election, at the earliest. **48066**

Storage Sales Telling for Industry

In addition to the warning from Veritas, storage hardware makers Emulex Corp. and Overland Storage Inc. have said they will miss their second-quarter revenue targets—a development that has made analysts nervous as the largest storage vendors prepare to report their results for the quarter.

"We're all anxiously waiting for the storage companies to report their numbers," said Gartner Inc.

analyst Roger Cox. "This quarter will be a telling quarter. The weather reports don't give you all that much confidence."

Nitsan Hargil, an analyst at Arlington, Va.-based investment bank Friedman, Billings, Ramsey Group Inc., said in a research note that Veritas will continue to face increased competition from larger vendors such as EMC Corp., which last year acquired data

backup and recovery software vendor Legato Systems Inc.

Dong Jin Kim, senior Unix system administrator for worldwide information systems at Eastman Kodak Co. in Rochester, N.Y., runs backup software from Veritas on his Sun Solaris servers.

Kim said he hasn't seen any change in prices from Veritas. But, he added that he has been getting increased sales pitches from EMC's Legato unit.

"Certainly, there's been more

price competition in a lot of these [storage] markets," said Brian Babineau, an analyst at Enterprise Storage Group Inc. in Milford, Mass.

But Babineau said it's too early to tell whether the storage sales slump is industrywide or limited to specific companies.

Emulex and Overland Storage both blamed a lack of reseller sales for their shortfalls, which they disclosed two weeks ago.

— Lucas Mearian

MySQL, SAP Plot Upgrade Of Open-Source Database

MaxDB to get 64-bit capabilities

BY MARC L. SONGINI

SAP AG and development partner MySQL AB are readying an upgrade to SAP's open-source database that will add support for 64-bit computing, along with new monitoring and management features.

SAP inked a deal with open-source database vendor MySQL in May 2003 to take over

much of the development, support and marketing of the SAP DB software, which MySQL renamed MaxDB.

Zack Urlocker, vice president of marketing at Uppsala, Sweden-based MySQL, last week said the two companies are working on a MaxDB 7.6 upgrade that's due by year's end.

The new version will run on additional operating systems, including 64-bit Linux and HP-UX, and support the Java-

based Eclipse development framework, he said. It will also include support for MySQL Proxy, a stand-alone program that lets MySQL's namesake software share information with other databases.

User Appeal

The performance boost that should come with 64-bit support is of interest to Charlie Brann, SAP administrator at Swisslog TransLogic Corp., as are the automated monitoring and management features.

Denver-based Swisslog uses SAP DB 7.3 to support its R/3 ERP system and other applications. Brann said the maker of

materials-handling systems is considering an upgrade to SAP's mySAP ERP software and a migration to MaxDB 7.6.

MaxDB is currently used in about 6,000 installations, Urlocker said. MySQL and

MaxDB

■ Originally developed by SAP as a free alternative to commercial databases for users of its applications.

■ Released in an open-source version by SAP in 2000, then renamed and offered under a commercial license by MySQL last fall.

SAP announced a commercial version last November as an alternative to the free release that SAP includes with its business applications. Pricing starts at \$49 per named user on single-CPU systems.

Charles Garry, an analyst at Meta Group Inc., said he doesn't see MaxDB at user sites very often, but he frequently discusses the technology with his clients.

IT managers at many large companies are reluctant to deploy the database because they think it's more appropriate for midsize users looking to cut costs, Garry said.

48060

COMPANIES THAT PUT VOICE ON THE NETWORK CHOOSE THE COMPANY THAT BUILT THE NETWORK.

When voice joins data on a secure network, some remarkable things can happen. Instead of managing different flavors of PBX from location to location, you can handle everything from one place, saving time and money—not to mention mileage on IT staff shoes. And with over 20 years of proven networking experience, Cisco has become the standard for millions of voice IP users around the world. It's why over half of the Global 500 have chosen Cisco to rethink the way they handle voice. And their business. Are you in yet? To learn how Cisco can help you plan, design and implement an end-to-end IP solution, visit cisco.com/go/ipcnw. **NOW, OVER THREE MILLION PEOPLE ARE USING CISCO IP PHONES.**



THIS IS THE POWER OF THE NETWORK. NOW.

©2004 Cisco Systems, Inc. All rights reserved. Cisco, Cisco Systems, Cisco IOS, and the Cisco Systems logo are registered trademarks or trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries.

Sun Exec Discusses Plans For Open-Source Solaris

No decisions yet about licensing model

BY CAROL SLIWA
SAN FRANCISCO

SUN MICROSYSTEMS INC. will make its Solaris operating system available under an open-source model by the end of the year, according to John Loiacono, the company's executive vice president of software.

Loiacono said no decision has been made about the open-source licensing model, but he discussed the philosophy behind the move to open-source during an interview at the company's recent JavaOne conference here. Excerpts follow:

Why is Sun going to make Solaris available under an open-source model? If you talk to CIOs about something like Solaris, you know what they say to me? "Why would you do that? It makes no sense to me." They say, "I want mission-critical, reliable, redundant, available, secure. That's what Solaris brings to me. I want that to continue. Open-source means very little to me."

Conversely, you go talk to the developers in that corporation, and they say, "Oh, this would be great. I can write drivers. I can do innovation."

So there's a sense of creating the community. This is about how I get more people developing software on the platform, because at the end of the day, it's all about applications. It's not about the OS itself. People like Windows because there's a lot of applications running on it. People are liking Mac more because there's a lot of applications on it. They like Linux because there's a growing number of applications on it.

The reason we're doing this on the whole is we're trying to create relevance in the fact that

there's more people finding Solaris and being more able to use and modify and actually develop on top of Solaris. And that isn't just about the [people] that we sell to. It's about creating the community of tens of thousands or hundreds of thousands of people who want to innovate on top of the code we give them access to.



Will moving to open-source allow Sun to decrease its Solaris development staff?

There's not going to be a huge decrease. The CIOs say, "My biggest worry about open-source is all the problems that things like Linux give me. What I want is your QA tests and all the rigidity you put behind a Solaris re-

lease." And my point to them is, absolutely. What we'll do tomorrow — whether it's open-source, or no matter what licensing model it is — you will get Solaris with all its QA, its tests, its hardening, all its security that you have today. All those resources required to do that, we will maintain.

In addition to innovation for things like container technology or fault recovery or dynamic tracing that I'm adding as new features in Solaris, I anticipate now that I'll have tens of thousands of people saying, "Here's an innovation on top of that." So could I get even more features built in, or could I over time reduce my cost of production? Yeah, absolutely — as long as I'm doing the QA and test cycle on what I call Solaris versus the open version of Solaris, which is proba-

bly called something slightly different, just to make sure people understand there are differences between the two.

Will there be two versions of Solaris? No. We will release the same version. But one will be open-source, no support. And one will be the one that we ship to Merrill Lynch.

Are you leaning toward a specific open-source licensing model at this point? We have some internal debates on what we think will be the most optimal. There are several to pick from. There isn't one hammer for every nail.

Is it possible you'll take an approach similar to what IBM did with Eclipse? Possible. You should also look at what Red Hat has done with Linux.

Any other models look appealing? I've got to be careful, because they do bring different things to the table. You have things like the Apache model, which gives you some of the brand-

ing rights. You have MySQL, which has some of the branding rights. You have the Mozilla license, which is a very popular license model. You have the CPL [Common Public License], which gives you some flexibility in different areas. And you obviously have GPL [General Public License] and LGPL [Lesser GPL]. Then we even have our Sun public license, something we call the SISL, the Sun Industry Standard License.

When will you make a decision about the licensing model? Shortly. I hate to be so vague, but by the end of the year, we'll have the whole thing announced.

Solaris is going open-source. Why not Java? We see ourselves as being the stewards of Java. Compatibility is a key issue. ☎ 48079

READ MORE ONLINE

The full interview with John Loiacono is available on our Web site:

QuickLink 48105
www.computerworld.com

Microsoft Partners Get New Support Options

BY CAROL SLIWA

Users turning to Microsoft Corp.'s ample stable of channel partners for products, support or consulting services are getting a new point of differentiation to help them make decisions about which vendors to select.

At its Worldwide Partner Conference in Toronto yesterday, Microsoft launched its Services Partner Advantage program to provide additional resources and support options to independent software vendors, systems integrators and other partners.

A standard prepackaged option gives a partner phone-based problem resolution support and various online resources. The higher-priced "plus" plan can be customized by the partner and adds a designated service professional at

Microsoft as a resource. There is also a third plan, based on the standard and plus offerings, that applies to Microsoft Business Solutions products.

"We want to try to drive better credibility for the partner community so they become more of an asset for their end customers," said Thomas Dawkins, a product manager for worldwide services at Microsoft. His prior experience includes running a consulting practice and work-

ing at an independent software vendor. "I know how important it is to show credibility to a new customer," he said.

Partners in the past had to pay at least \$40,000 to \$50,000 to get premier support with Microsoft. They will now find an entry-level option for the standard plan starting at \$5,000 to \$8,000; the entry price point for the plus plan ranges from \$27,000 to \$32,000, a Microsoft spokeswoman said. The less expensive options are expected to enable an increasing number of Microsoft's partners to access more consistent support.

"It could be a selling point for partners. They might say, 'We can support your system

better because we have a dedicated support resource at Microsoft,'" said Paul DeGroot, an analyst at Directions on Microsoft in Kirkland, Wash. Corporate users looking at competitive offerings from various partners might now ask what kind of support contract the partner has with Microsoft, he said.

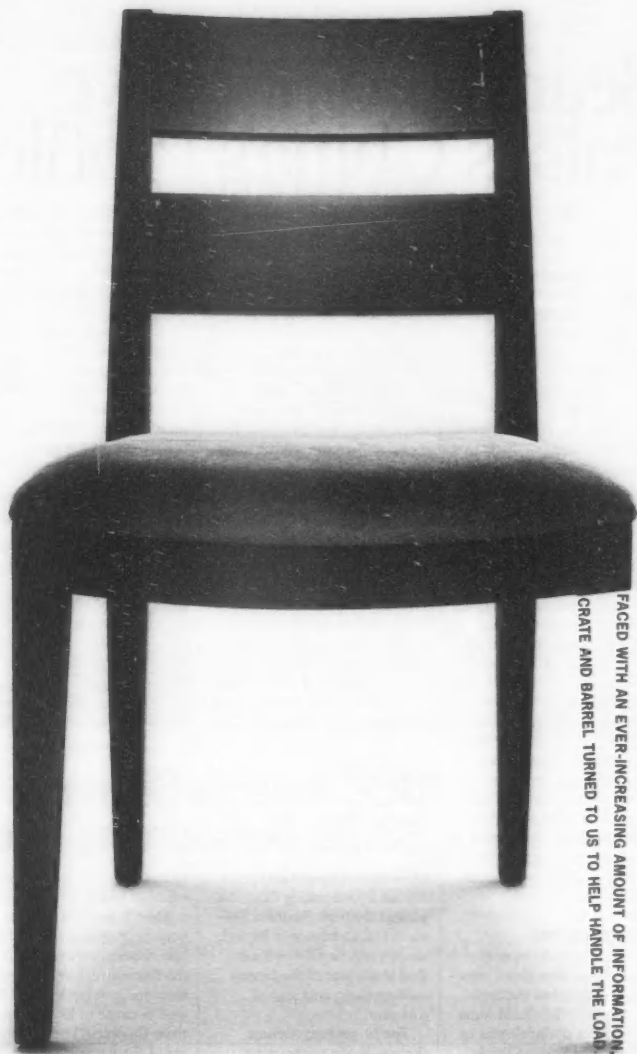
The Partner Advantage program is available to Microsoft's Registered, Certified and Gold Certified partners. It is intended to help address partner complaints about contract terms, limited service options and the lack of consistency in the naming of programs on a global basis, Dawkins said.

"It arms the systems integrators and ISVs with services they perhaps didn't have before or didn't have enough of to support their customers appropriately," said Paul Edwards, a Toronto-based analyst at IDC. "If partners can get access to the people they need [at Microsoft], the customers will benefit." ☎ 48082

Microsoft's New Services Plans

■ **Services Partner Advantage Standard Plan:** Prepackaged option coordinated by a team of phone-based service representatives. Offers online resources, problem resolution support and proactive services.

■ **Services Partner Advantage Plus Plan:** Customizable option managed by a designated service representative. Includes consulting services, workshops, problem resolution support, service delivery planning and online resources.



FACED WITH AN EVER-INCREASING AMOUNT OF INFORMATION,
CRATE AND BARREL TURNED TO US TO HELP HANDLE THE LOAD.



Consider the dots connected. The end-to-end voice over IP solution we designed for Crate and Barrel features a unified IP messaging platform and the most advanced hardware available. The new system will save them a bundle on maintenance, management and wiring, while easing the cost and complexity of adding features or employees. And it's already improving productivity, helping over 400 associates make millions of customers feel right at home. To find out more, go to sbc.com/dots. **GOING BEYOND THE CALL.**



SBC, the SBC logo and GOING BEYOND THE CALL are registered trademarks of SBC Knowledge Ventures, L.P. and/or its affiliates. © 2004 SBC Knowledge Ventures, L.P. All rights reserved.

BRIEFS

Microsoft Looks to Cut Costs by \$1B

Microsoft Corp. plans to lower expenses by nearly \$1 billion in its 2005 fiscal year, CEO Steve Ballmer wrote in an e-mail message to employees. Microsoft's costs have grown faster than its revenue over the past three years, according to Ballmer. "This is obviously not a trend we can continue," he said, adding that Microsoft executives "want to be prudent now so we avoid severe measures later." The company's new fiscal year began July 1.

Patent Ruling Goes Against Microsoft

The U.S. Court of Appeals in Washington reversed a lower-court ruling in Microsoft's favor as part of a patent infringement lawsuit filed in 1998 by Encinitas, Calif.-based TypeRight Keyboard Corp. The court said a decision invalidating two keyboard patents held by TypeRight was "improper" and sent the case back to the U.S. District Court in San Diego. Microsoft repeated its claim that no infringement took place.

Symbian Receives \$93M for OS Work

The six hardware vendors that continue to own stakes in Symbian Ltd. pledged \$93 million in funding to accelerate development of the London-based company's mobile operating system, which competes with software from Microsoft and PalmSource Inc. The infusion was part of a deal in which Psion PLC sold off its 31% stake in Symbian.

Short Takes

CISCO SYSTEMS INC. said it will pay \$9 million to buy Parc Technologies Ltd., a London-based developer of network routing software. . . . ANTI-VIRUS SOFTWARE VENDORS warned about two new variants of the Bagle e-mail worm that deposit copies of their source code on infected computers.

BearingPoint Move Raises China's Profile

But country still lags far behind India as offshore outsourcing destination

BY PATRICK THIBODEAU

BEARINGPOINT INC. has opened its second development facility in China, a move analysts see as part of a trend by U.S. firms to expand such operations in that country.

The McLean, Va.-based consulting firm said last week that it opened the 56,300-square-foot development center in the northeastern industrial city of Dalian. The facility currently has 60 employees, but BearingPoint hopes to have 1,000 people working there "as quickly as possible," said Craig Franklin, an executive vice president at BearingPoint and head of its Global Technology Services arm.

BearingPoint, which has 15,500 employees worldwide, also runs a development facility in Shanghai with 400 employees. It has a center in Chennai, India, with 100 people, which it plans to expand to 1,000 workers during the next year. The company also operates a development center in Spain.

Growing Interest

BearingPoint isn't the only multinational firm that's interested in China, but the country remains well behind India as a provider of development services, said Eugene Kublanov, an analyst at NeoIT, an outsourcing consulting firm in San Ramon, Calif.

In 2003, India had IT services exports of about \$9.5 billion, compared with about \$700 million for China, said Kublanov. Most of China's export work is for the Korean and Japanese markets, he said.

According to Michael Ye, general manager of business operations at Dalian Software Park Co., other IT firms with offshore operations in Dalian

include Accenture Ltd., SAP AG, Hewlett-Packard Co., IBM Global Services and GE Capital Corp.

Wu Jiazi is a China-based programmer who works for TopCoder Inc., a Glastonbury, Conn.-based firm that conducts online competitions for recruiting programming talent for outsourcing projects. Wu said he believes China's workers have the technical skills that will enable the country to rival or exceed India within several years. China lags not in technical skills but in development standards, he said. "Most Chinese firms are providing application solutions with relatively poor extensibility and documentation," he said.

Kublanov cited project management as a problem for Chi-

na as well. However, BearingPoint's Franklin said he believes his company has the necessary resources in place, including bilingual workers based in the U.S., to ensure good project management and clear communication.

Sierra Atlantic Inc., a Fremont, Calif.-based outsourcing firm that specializes in research and development, has a

development center in India. But it's eyeing China as a future development site because the country "has the best combination of cost advantage and supply of strong engineers," said Marc Hebert, a vice president. Market access is also a key factor in opening a development center in China, Hebert said.

Although labor costs in India are rising, Hebert said he sees nothing threatening that country's dominance as an offshore development center. Impediments to doing business in China include government bureaucracy and the language barrier, he noted. **C 48083**



Chinese officials and BearingPoint executives at the opening of BearingPoint's development center in Dalian, China

BBC Awards Siemens \$3.7B Outsourcing Pact

BY PATRICK THIBODEAU

British Broadcasting Corp. has picked Siemens Business Services Ltd. to take over its technology arm in a \$3.7 billion deal that's one of the largest outsourcing pacts signed this year.

The 10-year agreement, the result of a contracting process that took only about six months, calls for the BBC to sell its wholly owned commercial subsidiary, BBC Technology Holdings Ltd., to Siemens. BBC Technology employs about 1,400 workers.

John Varney, the BBC's chief technology officer, said Siemens was chosen because the company "understood our

technology vision [and] where we need to get to."

Most important, "it was a very, very strong cultural fit," said Varney, who noted that the Berkshire, England-based Siemens unit got the nod in part because of its willingness to be flexible. "They understand the nature of this contract, in that it will need to be very dynamic — it will need to

evolve over the next 10 years."

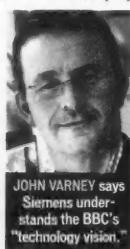
Moreover, Siemens is "prepared to travel with us as we move toward a different world of broadcasting," Varney said. "The basis of our transformation is to use Internet technologies to bring program-making

to every desktop."

The BBC began its selection process in December with an advertisement for bidders. It compiled a list of 31 vendors and quickly reduced that to nine and then three: Siemens, Accenture Ltd. and Computer Sciences Corp., which dropped out of the running.

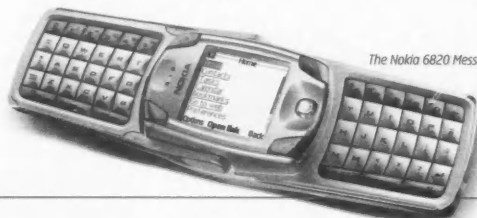
Varney said it's possible to put together a complex outsourcing deal rapidly if enough people are assigned to it. The BBC assembled a team of about 70 people who conducted "1,000 man-days of negotiations" over a four-week period, he said.

The BBC used a combination of objective measures and subjective assessments in reaching its decision, Varney said. In a previous interview [QuickLink 47040], he said it was important that teams from the BBC and the vendor be able to work well together — something he said has been accomplished with Siemens. **C 48081**



JOHN VARNEY says Siemens understands the BBC's "technology vision."

Why carry two devices when you can carry just one?



The Nokia 6820 Messaging Device



Time Zone Tim

If your employees are often out of the office serving customers, yet they always need to stay connected, the Nokia 6820 Messaging Device is the right call. A full messaging keypad makes email fast and easy. A color screen enhances readability. And because Nokia business mobility offerings go beyond phones to enable sophisticated back-end secure mobile connectivity, you can give your workforce the advantage of mobile access to critical data such as sales numbers, inventory levels, financials, and more. When you think about it, with the



Nokia security appliance



Never in the Office Nora

Nokia 6820 Messaging Device and business mobility solutions, who needs an office? Email, voice, data—even calendar and contacts—are always right where your people need them: at their fingertips.



Learn how to mobilize your team and increase business productivity. Download "The Anytime, Anyplace World" white paper. nokiaforbusiness.com

NOKIA
CONNECTING PEOPLE

Court Upholds Calif. E-voting Ban

Advocates for the disabled claimed it was discriminatory

BY DAN VERTON

A FEDERAL JUDGE last week upheld a California directive that decertified touch-screen voting machines and withheld future certification until vendors of those systems can meet specific security requirements.

The decision arose from a lawsuit, *Benavidez v. Shelley*, brought by disability rights advocates and four California counties that oppose California Secretary of State Kevin Shelley's requirement for voter-verifiable paper audit trails. The counties also oppose Shelley's order to decertify direct-recording equipment

(DRE) voting systems.

The plaintiffs argued that banning the systems would disenfranchise visually or physically impaired voters.

In an order issued by the U.S. District Court for the Central District of California, Judge Florence-Marie Cooper

The evidence does not support the conclusion that the elimination of [e-voting machines] would have a discriminatory effect on the visually or manually impaired.

U.S. DISTRICT COURT JUDGE
FLORENCE-MARIE COOPER

wrote that "the evidence does not support the conclusion that the elimination of the DREs would have a discriminatory effect on the visually or manually impaired."

Cooper also said that the secretary of state's "decision to suspend the use of DREs pending improvement in their reliability is certainly a rational one, designed to protect the voting rights of the state's citizens." Cooper noted that Shelley is responsible for ensuring that votes are counted accurately, and requiring a paper audit trail is one way of fulfilling that obligation.

Cindy Cohn, legal director for the Electronic Frontier Foundation, called the court's decision a "landmark" ruling.

"The court said in clear, unambiguous terms that requiring a paper trail for e-voting

machines is consistent with the obligation to assure the accuracy of election results," Cohn said. "That's an enormous victory for secure elections."

The plaintiffs in the case did not respond to calls seeking comment.

State and local elections officials around the country are scrambling to ensure that e-voting systems in different

jurisdictions are reliable and can be secured from tampering in time for the November election.

The decision follows the release of a report two weeks ago by an IT security panel that outlined a strategy for certifying the security and reliability of touch-screen DRE voting systems [QuickLink 47931]. The systems will be used in jurisdictions representing about 30% of registered voters in the upcoming presidential election. **48085**

NEW PRODUCT

Siemens Adds to Unified Communications Software

HiPath OpenScope Version 2.0

Siemens Information and Communication Networks Inc.

PRODUCT SUMMARY: The Boca Raton, Fla.-based subsidiary of Siemens AG today plans to announce an upgrade of its presence-aware communications and collaboration software, which includes buddy-list capabilities and provides consolidated access to voice, e-mail, instant messaging and conferencing services. Version 2.0 adds a Web services tool kit for developing real-time communications applications based on open standards such as the Session Initiation Protocol.

Siemens said the new release also can notify end users when someone they need to contact becomes available. Other new features include a text-based user interface, support for natural speech recognition and a rules wizard for setting automated changes in presence status or communications device preferences.

USER EXPERIENCE: America-Mideast Educational and Training Services Inc., a Washington-based company that operates educational exchanges between countries and provides language training, is using Version 1.0 of OpenScope and will upgrade to the new release in the fall. Ugur Usuni, director of IT at America-Mideast, said he wants to take advantage of new features such as the ability for end users to set

their contact preferences via a phone call.

America-Mideast has 250 OpenScope users in offices worldwide, and Usuni said one of the big benefits of Version 1.0 is that someone setting up a conference call can quickly contact other workers instead of waiting for them to call in. "It's a scheduling device, in a sense," he said. "I just figure out the people I need to call."

ANALYST ASSESSMENT: Version 1 of OpenScope is presence-aware and supports real-time collaboration, but users should see increased capabilities in Version 2.0, said Gartner Inc. analyst Jeff Snyder. "This version brings us closer to unified communications, especially as companies replace traditional voice switches with IP telephony," Snyder said. He added that Siemens has an advantage over its rivals because OpenScope can work with any telephony switch.

OTHER VENDORS IN MARKET: Mitel Networks Corp. and Nortel Networks Ltd.; Snyder predicted that Cisco Systems Inc. eventually will enter the market.

PRICE: OpenScope 2.0 sells for \$125 per user for basic presence capabilities. Collaboration support costs another \$125 per user; a voice portal can be added for \$100 per user.

AVAILABILITY: Version 2.0 is due in early August. **48057**

- Matt Hamblen

GAO Says IT Mismanagement At Pentagon Wastes Billions

BY DAN VERTON

Despite years of modernization efforts that have cost taxpayers billions of dollars, thousands of IT systems at the Pentagon remain "fundamentally flawed" and have led to logistics and pay problems for forces serving in Iraq, according to a new report by the U.S. General Accounting Office.

The problems, primarily a lack of management oversight and investment control, stem from "long-standing" challenges to the Pentagon's business modernization efforts, GAO auditors told members of Congress last week.

For example, more than 200 inventory control systems at the Department of Defense still aren't integrated, offering little or no visibility into the Pentagon's \$1.1 trillion in assets, according to the GAO. In addition, the Pentagon has no standard process for identifying critical business systems, nor does it even have a standard definition of what consti-

tutes a business system.

"These problems have left the department vulnerable to billions of dollars of fraud, waste and abuse annually, at a time of increasing fiscal constraint," GAO auditors told Congress.

The Defense Department's IT management blunders have also adversely affected U.S. military units and service members, including those fighting in Afghanistan and Iraq, according to the GAO.

The lack of IT management at the Pentagon has caused military personnel to experience "substantial logistical support

problems" in Iraq, the GAO concluded.

In a written response to the GAO's findings, David Norquist, acting comptroller at the Pentagon, cited the continuing development of a business enterprise architecture and a busi-

ness IT investment governance structure that he said should begin to reap benefits during the fiscal 2006 budget cycle.

John Gilligan, CIO of the Air Force, said the GAO report tells only part of the story. According to Gilligan, the \$19 billion that the DOD requested for modernizing its business systems, as cited in the GAO report, also covered infrastructure costs such as classified and unclassified networks and computing centers in both U.S. and overseas locations.

Gilligan said the branches of the military have made substantial progress in consolidating and modernizing their business systems, "on a scale larger than all but a few of the Fortune 500 companies."

Karen Evans, the White House's director of e-government, said the DOD's leadership "supports the president's management agenda and is committed to transforming the department's business operations." **48084**



EVANS: Leaders are "committed to transforming the [DOD's] business operations."



HP Integrity servers are taking off, as are the companies using them.

Companies adopting HP Integrity servers, powered by industry-leading Intel® Itanium® 2 processors, are seeing remarkable gains in performance. The momentum is building. One after another, companies are choosing HP Integrity servers. Leading software and technology partners such as BEA, Microsoft®, Oracle, SAP and Siebel Systems have embraced the platform as an industry standard. And with the ability to manage a mixed environment of UNIX, Microsoft® Windows®, Linux and OpenVMS, HP Integrity servers are fast becoming the ultimate consolidation tool. Demand maximum performance, reliability and cost-efficiency now, on a platform that will carry you forward into the future. Demand performance that's real-world proven, and get it—with HP Integrity server solutions.

Choosing HP Integrity servers, choosing results.

AIRBUS UK:

Running HP-UX11i on HP Integrity servers, 20-30 wing design simulations that used to take weeks are now done overnight.

COMPUSA:

Going with 64-bit architecture using HP Integrity servers, they cut access time to inventory data by up to 85%.

FIAT AUTO:

Standardizing on 64-bit infrastructure using HP Integrity servers, they're integrating and enhancing sales and service as well as streamlining the buying process while lowering sales cost.

THE KOEHLER GROUP:

Moving to an environment composed of HP Integrity servers, they gained a 50% improvement in mission-critical performance.



To get the IDC white paper outlining the performance of HP Integrity servers with Intel Itanium 2 processors, go to hp.com/go/demandIntegrity5 or call 1-800-282-6672, option 5, mention code AQHF.

Intel, Intel Inside, the Intel Inside Logo and Itanium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the U.S. and other countries. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation. ©2004 Hewlett-Packard Development Company, L.P.

MARYFRAN JOHNSON

Bracing for Backlash

ONE DAY, the political windstorm around offshore outsourcing will blow over. One day, the inflated numbers on both sides of the debate will be debunked. One day, the last angry letter from a displaced American IT worker will be published.

Unfortunately for IT managers everywhere, that day is not today.

The emotional backlash against any plans to outsource technology jobs overseas — regardless of how economically or competitively driven — is a force to be reckoned with in today's IT workplace. It dampens the morale of even the most valuable, talented



MARYFRAN JOHNSON is editor in chief of *Computerworld*. You can contact her at maryfran.johnson@computerworld.com.

employees, as we saw recently in our Best Places to Work in IT survey [QuickLink a4610]. One reader sent us a note last week suggesting that we include "foreign outsourcing statistics" in future Best Places reports, thereby revealing how many U.S. citizens are part of the IT head count of the companies on our list.

Negative reactions can blast back from customers as well as from affected employees, as Dell and Lehman Brothers discovered when they had to pull customer service operations out of India. Despite a few other widely publicized retreats, the majority of Fortune 1,000 companies are forging relentlessly ahead with offshoring plans — albeit with greater stealth, in hopes of avoiding bad publicity.

The bottom line driving what Gartner calls an "irreversible megatrend" is always the same: cost savings too compelling to ignore in an open, interconnected global marketplace. "To outsource offshore is not a political decision on the part of the company. It's an economic decision with political ramifications," says Mike Hoyt, CEO of Paradigm Works. He's one of our sources in "Damage

Control" (page 31, and online at QuickLink 47609), a story about how IT managers can cope with the offshore backlash.

One impressive example of a company dealing effectively with the backlash problem is Union Bank of California, which created a "sourcing management office" to handle any concerns that might harm its reputation with customers. The office's duties include handling all communications about the bank's offshore plans.

The preventive measures we discuss in our story basically boil down to having honest, frequent, candid communication with everyone involved. CFO magazine gave similar advice last month in its cover story about offshoring, noting that the ma-

jority of the 275 financial executives surveyed had no intention of canceling their offshoring plans, despite the backlash. Some 42% of those CFOs said they were realizing net savings of more than 20% from their offshore projects, and 64% were planning to increase offshoring levels.

So where do companies go wrong in communicating their outsourcing plans? Let us count the ways. They overlook a basic communications plan for internal or external consumption (the offshoring version of a "don't ask, don't tell" policy). They fail to explain why a given project is going overseas or how such decisions are made. They try to downplay the negatives about workforce changes. They hide their plans for as long as possible, then look guilty and act defensive when the news leaks.

Some analysts are predicting that the backlash will fade away by next year, and I hope they're right. But in the meantime, IT managers must brace for the backlash and deal with it decisively.

"You don't want rumor to overtake reality," says Michael Treacy, co-founder of Gen3 Partners, an outsourcing consultancy. "In the end, you can only politicize so long, and then the facts will prevail." **48033**



MICHAEL H. HUGOS

The Systems Builder

IGOT INTO the IT business because I love to design and build systems. After doing a lot of designing and building and watching others do a lot of designing and building, one of the most important things I've learned is that successful projects are always run by a certain kind of person. This person can speak both the language of technology and the language of business. This person understands the specific business issues that a new system is supposed to address and is always looking for simple and effective ways to use technology to get things done. I call this person the systems builder.

The competence of the systems builder goes a long way toward determining the success or failure of any development project.

Often, the systems builder comes up through the technical ranks and learns about business along the way. Sometimes the systems builder comes up through the business side and manages to learn about technology. Either way, this is someone who can clearly demonstrate skills in two main areas: designing systems and leading projects to build systems.

Next month, I'll discuss the six skills that are the basis for success in leading projects. But now I'll look at the five basic skills the systems builder needs in order to be any good in the first area — designing systems. There are certainly other skills, but without these as a foundation, the systems builder can't excel in the design process:

1. Understand the business operation.

The systems builder needs to have a good grasp of the concepts and rules that guide the business operation. This means knowing how the operation fits



MICHAEL H. HUGOS is CIO at Network Services Co., a distribution cooperative in Mount Prospect, Ill., that sells food-service and janitorial supplies. He is the author of *Essentials of Supply Chain Management* (John Wiley & Sons Inc., 2003). He can be reached at mhugos@nsonline.com.

into the overall business, how the work of the operation is performed and what the cost and profit factors are.

2. Create an inclusive process. Systems builders must be able to consistently produce competent (and sometimes even brilliant) designs in spite of high levels of complexity in both business and technology. Complexity loses much of its power to intimidate and confuse if groups of people with the appropriate skills and experience are brought together in a collaborative process where they can pool their collective insights. The systems builder is the one who orchestrates this process.

3. Tolerate not knowing. It's an act of real discipline to immerse yourself in the details of a situation and resist the temptation to rush to judgment. Because of the complexity inherent in most situations, it's unlikely that a great system design will be the first or even the second one that comes to mind.

The systems builder keeps an open mind and encourages others on the project to do the same as they investigate the issues.

4. Look for the simple underlying patterns. This is the creative leap where investigation and analysis give way to synthesis and the design emerges. At first, you're assailed by the surface complexity of the situation and all the potential technology that could be used. When you allow a range of possible solutions to be generated, some profoundly simple and yet very useful insights can emerge.

5. Use simple combinations of technology and process. Beware of the cleverness trap. Cleverness means complexity, and complex designs are very hard to build. Strive to create system designs that display an elegant simplicity. Use as few technology components as possible, and use each component for what it does best.

Use these components to support streamlined workflow processes that will achieve the performance levels needed to effectively respond to the business issues that the system is meant to address.

If you are a systems builder or want to become one, work at developing these skills, and your success rate will go way up. If you are an executive who sponsors or oversees systems development projects, make sure that a person with these skills heads each project.

47673

THORNTON A. MAY Success With Word, Mind And Deed

FOR HIGH-LEVEL IT managers, career success could be a matter of WMDs.

No, those aren't weapons of mass destruction. In this case, WMD is shorthand for "words, mind-sets and deeds."

Words refers to the messages we send. Mind-sets are the mental models that are at work in our own brains and in those of key constituents. Deeds refers to how we and key constituents behave.

Words

Several years ago, the CEO of a major software vendor visited Tokyo. Wanting to reach out to his audience of very senior IT executives, he decided to pull a Kennedy: Just like J.F.K. in Berlin and Jackie Kennedy in France, he would open his remarks in the native tongue of his audience. He wanted to

say, "I am tickled pink to be here. I am so happy I could die."

Instead he said, "I have a rash that will probably kill me."

The hygiene-conscious Japanese were in no hurry to meet with this CEO. The lesson: Have a message that matters and is connected to what you are trying to do. And while it's always a good idea to speak the language of one's audience, it's also important to make sure that the message translates correctly.

Mind-sets

Research sponsored by Lawson Software and conducted at a series of executive dinners across the country indicates that IT leaders with accelerating career momentum have a real-time inventory of the IT mental models that are at work in and around the enterprise.

An IT mental model is the particular way in which a person thinks about IT — values, beliefs, frameworks, stories.

Successful IT leaders understand their personal IT mental models, the IT mental models of their internal and external customers, and the IT mental



THORNTON A. MAY is a longtime industry observer, management consultant and commentator. Contact him at thorntona@cs.com.

models that are at work among their competitors.

Deeds

Many longtime participants in the IT game observe that for all our fuss and bother, the problems we are working on today are much the same as the problems we were working on 20 years ago. This is probably because we thought for the longest time that our job was to deploy technology.

As new technology became available and expanded what we could

accomplish with a computer, we deployed it. But deploying stuff isn't our real job. Although we're just now stepping up to it, our real job is to change workplace behavior.

Before starting an IT project, one should model "before" and "after" workplace behaviors. IT success now hinges on how people act — their deeds — not on which technical devices were shipped and plugged in.

47952

WANT OUR OPINION?

More columnists and links to archives of previous columns are on our Web site: www.computerworld.com/columns

READERS' LETTERS

Keep Users in Mind, And Keep It Simple

LARRY WILLIAMS' contribution [QuickLink 47099] to your May 31 letters column speaks volumes about how some techies view users with distaste and arrogance. Commenting on a column about the perils of Sasser, etc., Williams' retort is essentially that all one has to do is install hardware and software firewalls and disallow a bunch of software and secure-clear administrator rights, and so on.

For the minuscule percentage of technically adroit PC owners and users, this is certainly all child's play. The issue is that the vast majority of PCs are operated by folks who can no more do those things than they can replace the drivetrain of their cars.

If there were a plague of poor asphalt leading to more accidents, the cry would naturally be to improve the roads, but for folks of Williams' persuasion, the "simple answer" would be to just install extra low

gears in your car to make it easier to drive those "supposedly dangerous" roads.

Bob Fately

Partner, Third Wave International, Van Nuys, Calif.

Not Rocket Science

IN THE ARTICLE "EU Seeks Quantum Cryptography Response to Echelon" [QuickLink 46947], the author observes that there are a number of technical challenges, including building "sensors capable of recording the arrival of photons at high speed." Because all photons travel exactly at the speed of light, it is uncertain why encrypted ones should require special treatment. More directly relevant to the apparent problem of unauthorized satellite eavesdropping would be the simple solution of not leaking communications skyward, where satellites could receive them. Clearly, quantum cryptography is not rocket science.

John Michael Williams
Redwood City, Calif.

Tech Issues Will Delay Music-Store Death

PIMM FOX thinks that in less than a decade, the big brick-and-mortar music retailers will be out of business ("The Day the Music Stores Died," QuickLink 46935). He goes on to cite Internet downloading and the Apple iPod as the technologies that will destroy music retailing.

Although 10 years is a long time, it won't be long enough to destroy the music business. Many collectors enjoy the liner notes, and these don't come with downloaded tracks. But this isn't the only thing stopping the wholesale demolition of music retailers: The technology ain't all that great! My 40GB MP3 jukebox died after less than six months. What music aficionado wants to trust such unreliable technology?

Even more troubling is the greedy music industry. Until it can agree on a model and format that works on all devices, this transformation won't occur. The pricing needs to be fixed, too: \$1 a track is highway robbery if

all I'm getting are some bits and bytes and not a tangible disc or tape. And I want to be able to copy it from my PC to my MP3 player to my car to a tape and to a CD — multiple times. Once I've bought it, it should be mine. Let's solve these issues first, then we can talk about shutting down the CD shops.

Craig S. Mullins
Director of technology planning, Houston

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843.

E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

For more letters on these and other topics, go to www.computerworld.com/letters

Your business is only as secure as your network.

Here's some extra protection:

www.idg.net/mcafeecenter

If your company is compromised or experiences downtime for even a matter of minutes, that time can translate into lost profitability, customers and dollars. And that is something none of us can afford.

For that reason the McAfee® Enterprise Security Center was created: an exclusive collection of news, whitepapers, information, analysis and strategies for securing your networks and systems.

Learn new strategies for securing your servers and protecting your desktops from viruses. Get the latest information on how to stay on top of the latest threats to your network and bolster your skills in synergizing your IT staff as a critical business asset.

Armed with this knowledge, you'll not only strengthen your network's defenses, you'll also enhance your IT leadership and business skills, benefiting your enterprise's bottom line—and your own.

Content for the McAfee Enterprise Security Center is supplied by these award-winning IDG publications:



COMPUTERWORLD

The Voice of IT Management

CSO The Resource for
Security Executives

NetworkWorld

Sponsored by:



TECHNOLOGY

07.12.04

Simplifying NAS Management

More companies are choosing technology that pools and virtualizes network-attached storage systems to consolidate NAS management. **Page 25**

CASE STUDY

Wireless CRM Takes to the Field

Pitney Bowes' new wireless field service system gives technicians both a broader wireless coverage area and expanded access to customer data. **Page 24**



SECURITY MANAGER'S JOURNAL

Four Steps to a Secure Budget

Our new Security Manager's Journal columnist outlines a step-by-step strategy for freeing up funds for critical IT security projects. **Page 28**

CHRISTIAN NORTHEAST

CHRISTOFER HOFF is taking no chances when it comes to protecting his organization against worms and viruses. As the director of enterprise security services at Western Corporate Federal Credit Union (Wes-Corp), Hoff has put in place a multilayered architecture designed to set as many barriers as possible between the bad guys and his data.

Apart from the usual firewall and antivirus tools, the San Dimas, Calif.-based company, which has \$25 billion in assets, has also segmented its networks and deployed an array of intrusion detection and prevention tools, client security products and threat-modeling software. Such defense in depth is precisely what's needed to keep marauding malware at bay these days, say security practitioners such as Hoff.

"The worm problem has completely

catalyzed the relevancy of the information security function," says Hoff. "It's not about ROI any longer but about the reduction of risk on investment."

Worms and other malware have been around for years. But several trends are coming together to make them more dangerous than before, users say.

■ **Worm writers are taking advantage of newly announced software flaws more quickly, giving users less time to defend their systems.** Last year's Blaster was considered fast when it exploited a vulnerability in 26 days. This May's Sasser worm took 17 days, while the Witty worm in March was out in one day. And there have been a few "zero-day" exploits, which appear before a flaw has been disclosed or a fix becomes available. Their damage has been limited, but it's only a matter of time before a virulent one is unleashed, experts say. "This is a war. If the users are to win, they have to beat the clock every single time," says Eric Litt, chief information security officer (CISO) at General Motors Corp.

But companies are still taking an average of 60 days to patch their systems, which is too long, says Gerhard Eschelbeck, chief technology officer at Qualys Inc., a Redwood Shores, Calif.-based provider of vulnerability management services. Also, every year half of the most critical vulnerabilities are replaced with new, equally serious ones, he says.

■ **Exposure to risk is increasing as companies connect their secure networks with those of partners and other third parties.** The burgeoning remote and wireless user population adds to the problem.

"There are more avenues that can be attacked, which is why perimeter defenses alone are no longer enough," says Greg Murray, vice president of information security at Information Resources Inc. in Chicago. IRI does market research for some of the world's largest food, consumer goods and pharmaceutical companies.

■ **Worms are being released at an ever-increasing rate, and they're becoming more lethal.** Four of the five worst mass out-



Companies are throwing up layers of protection as new worms and viruses appear at an ever-quicken pace. **BY JAIKUMAR VIJAYAN**

breaks of worms — MyDoom, NetSky, Bagle and Sasser — have taken place this year. Antivirus firm Symantec Corp. has rated more threats at Category 4 — its most severe — in the first part of 2004 than it did in all of 2003. For instance, MyDoom infected systems and then used them as launch pads for denial-of-service attacks against Microsoft Corp. and The SCO Group Inc. Other worms have attempted to block infected systems from downloading patches and antivirus updates, while others have been used to install back doors and steal data.

"The day of the digital Pearl Harbor that a lot of people have been talking about is fast approaching," says Jamie Chanaga, CISO at Geisinger Health System in Danville, Pa.

Preparing for that emergency requires a security architecture capable of automatically detecting and blocking threats, both known and unknown, says Litt. "The dominant [antivirus] technologies today are those that filter out infections based upon signatures," he says. This approach works only with known vulnerabilities and exploit code. Given the shortening time between vulnerability disclosures and exploit availabilities, that simply isn't enough, Litt says.

"The core reason why worms and viruses are so effective is that it is not always feasible for companies to patch production systems right away," says Chanaga. The goal should be to have

enough defense layers so that a breach of one layer won't compromise your ability to do business, Litt says.

In WesCorp's case, the company's networks have been segmented by application function and business value. For instance, all of its SQL servers sit on one segment, and its mail servers sit on another. Each network segment is protected by an array of intrusion detection and prevention systems, and deep packet-inspection firewalls and signature-based antivirus technologies conduct filtering.

WesCorp uses a server-based scanning technology from WholeSecurity Inc. in Austin to scan client or partner systems for Trojan horses, spyware and other malicious code before letting another party log into its corporate network. A Qualys third-party vulnerability management service scans for holes and helps WesCorp quickly prioritize the assets that need to be protected in the event of an attack. Also deployed is software from Skybox Security Inc. in Palo Alto, Calif., that combines firewall, router, network and vulnerability data to model attacks.

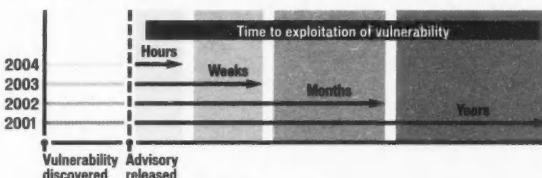
Technology from Crossbeam Systems Inc. in Concord, Mass., allows WesCorp to consolidate the management of all of its security components. The result is impressive, but not perfect, security. "We will never be able to bring down the risk to zero," Hoff says.

It's crucial to install host firewalls, virtual private network support and

DISCOVERY/ATTACK LIFE CYCLE

As this graph illustrates, the window between the time a vulnerability is discovered and the time it is exploited is shrinking. Consequently, security teams have less time to identify and fix problems before networks are subject to attacks.

SOURCE: QUALYS INC.



intrusion-detection technologies on all endpoint devices and to have ways to enforce compliance with clients and business partners, says Murray. He uses a tool from Check Point Software Technologies Ltd. to do all of that.

"The days when you could simply have a titanium outer shell are over, considering you have to open your networks to trading partners, vendors and other institutions," Chanaga says.

Real-time monitoring of the network and all systems connected to it is also crucial for detecting vulnerabilities and prioritizing responses, says Chanaga, who is using Qualys to do both.

Lesson Learned

Sallie Mae Inc. has revamped much of its worm mitigation strategy after being badly mauled by the Nimda worm in September 2001, says Marc Houpt, the company's information security architect. Since then, Reston, Va.-based Sallie Mae has signed up with New York-based MessageLabs Inc. to scan its 80,000 daily e-mails and filter out executable files and other suspicious extensions. It has deployed antivirus software from Computer Associates International Inc. on all servers and workstations and has increased the frequency of its searches for updated virus signatures from twice a day to every four hours. The company's workstations check with the master antivirus server every 15 minutes.

Sallie Mae's information security team has also been given greater authority to make spot decisions about worms and viruses, Houpt says. When MyDoom started spreading, he was able to quickly convince his superiors to shut down the e-mail servers until the problem was fixed. Previously, such a shutdown would have required "two or three levels of authorization and a very strict on-the-spot change-control process," he says. "Now all it requires is a consensus between the network manager and myself."

It's important to keep certain issues

in mind when deploying such a multi-layered defense, users say.

The biggest is the integration of the various technology components. Where possible, it's important to use buying power to get vendors to do the integration for you before agreeing to buy a product, Hoff says.

Having a multilayered strategy also does little good without comprehensive analytical and reporting capabilities to interpret and present the information that's gathered by such systems, Murray says.

"More security technologies doesn't make you more secure; better management does," says Sam Curry, a vice president at CA.

And don't underestimate the support issues. For instance, integrating security into endpoint devices will inevitably result in more calls to the PC help desk, requiring the information security group to assume responsibility for some of the cost burdens as well, Hoff says. So end-user training is an essential component of any worm mitigation strategy.

Ironically, regulations can sometimes get in the way. For example, Geisinger is unable to deploy much-needed patches and antivirus software on exposed Windows-based clinical systems because it will break the FDA certification on those systems, Chanaga says.

The effort also needs to be balanced against business needs, Houpt says. For instance, when the information security team gets the authority to shut down critical servers, it must have a very good understanding of a problem's potential effect, he says.

"Your infosec team needs to have the technical know-how and the credibility to make an impact assessment, and the user teams need to be able to trust that knowledge," Houpt says. **Q 4771**

BAD GUYS FOR HIRE

The profile of those launching malware is changing:

QuickLink 47709
www.computerworld.com

MORE THAN SIGNATURES NEEDED

Signature-based antivirus technologies

will continue to play a role in future worm-mitigation strategies but won't be as prominent as they are now, users say.

Traditional antivirus products filter out worms and viruses by matching patterns in their files. The approach is still considered the most effective in blocking known threats, especially because some worms float around the Internet for years, users say. Companies that have kept their virus signatures updated have consistently been able to avoid even the more dangerous outbreaks.

However, the technologies don't work against previously unknown worms. For such products to be effective, vendors need to develop new signatures every time a worm appears. This is true even in cases of multiple worm variants that may all be exploiting the same vulnerability or use the same methods. The speed at which vendors can deliver such updates is becoming increasingly crucial as hackers exploit holes at a quicker pace.

Users also need a way to constantly poll for new signatures to keep their files updated. Because of the increase in the number of worms, companies have had to dramatically increase the

number of times they check for updates with antivirus vendors, sometimes doing so as often as once every 15 minutes. "Worms are traveling faster than antivirus updates," says Gerhard Eschelbeck, CTO at Qualys.

In the future, big companies won't be able to count on antivirus vendors to win the race, says Eric Litt, CISO at General Motors.

That reality is forcing many of them, including GM, to look for technologies capable of detecting and proactively blocking threats.

Thermo Electron Corp. a \$2 billion manufacturer of medical equipment in Waltham, Mass., is planning to deploy a new "memory firewall" from Determina Inc., a start-up in Redwood City, Calif. Instead of signature matching, Determina's technology uses an application memory scanning technique to detect and block even unknown threats.

Other products block attacks based on deviations in network traffic. While such products are being offered as alternatives to signature-based technologies, experts say it's too early to predict how effective they'll be.

—Jal Kumar Vijayan

Predict Virus Outbreaks?



IronPort C-Series Email Security Appliance

Believe it.

Introducing IronPort Virus Outbreak Filters

Today's email borne viruses propagate globally in hours or minutes, much faster than traditional defenses can react, leaving you exposed to the "reaction time gap." IronPort's Virus Outbreak Filters™ stop viruses 4 to 6 hours before traditional virus definition files are available, literally predicting virus attacks before they cause harm. Predict your future at www.ironport.com/cw

POWERED BY
AVI

IronPort's A/Vi technology is a series of algorithms that process data from SenderBase®, the world's largest email traffic monitoring network.



Rebuilding the World's Email Infrastructure.

Wireless CRM Takes to the Field

Pitney Bowes' revamped field service system provides broader wireless coverage while giving technicians access to more customer information. **BY MARC L. SONGINI**

WHILE MANY companies are still testing large-scale wireless CRM projects, Stamford, Conn.-based mailing systems vendor Pitney Bowes Inc. is an experienced practitioner. The \$4 billion company set up its first wireless system in the late '90s. Since then, it has deployed a second-generation system for 250 field service employees in its Document Messaging Technologies division, which sells high-end inserter mailing systems.

Now the company is wrapping up a more sophisticated wireless CRM rollout for its Global Mailing Systems division, where some 1,500 wired employees service Pitney Bowes machines designed for the low-volume distribution of mail.

The newest system connects field service representatives to its back-end call center and service applications. Using pocket PCs, RIM 957s from Research In Motion Ltd. and other devices, service technicians can access a wide range of data from multiple back-end systems. Such data includes information about inventory availability and whether calls are billable or covered by contract.

Early Start

The company's first wireless CRM system was more limited. It relied on Motorola Inc. "brick" client devices that connected to homegrown CRM systems, and it retrieved service call data over Motient Corp.'s wireless data network, says Ralph Nichols, service program manager at Pitney Bowes.

In 1999, the company began moving to low-cost RIM devices and started work on an integrated field service and

call center back end, says Mark Davis, vice president of customer service.

In 2001 Pitney Bowes installed field service software from San Mateo, Calif.-based Siebel Systems Inc. for its Document Messaging division, and it upgraded to cellular wireless service from Atlanta-based Cingular Wireless, which uses General Packet Radio Service (GPRS) technology.

For wireless connectivity middleware, Pitney Bowes uses software and services from Antenna Software Inc. Antenna A3 and SmartClient field service software links field workers with RIM handheld devices to Siebel sales force automation software and Pitney Bowes' parts ordering system.

Network coverage was important, so the company tested several carriers and devices before settling on Cingular's service and RIM's handheld de-

vices. Jersey City, N.J.-based Antenna was the logical choice for gateway software and services, says Paul Weston, vice president of CRM at Pitney Bowes. Its software had the most features, included systems management tools for troubleshooting breakdowns, supported multiple carriers' networks and was already Siebel-approved.

Ensuring the convenience and usability of the devices was also key. "If the thing is difficult to use, the people will find ways around it," says Weston. So the staff made sure that menus on the RIM devices were easy to navigate and included special product codes to help users place inventory orders.

The workflow starts in the system when a customer calls the contact center to place a field service request. The Siebel application identifies the product needing repair, selects the representative to dispatch and pushes the request out to that technician's wireless device. The recipient then acknowledges the receipt of the order.

Messages from the devices are routed to Antenna's wireless gateways in New Jersey. XML-formatted data is then forwarded over a frame-relay or VPN connection to Pitney Bowes' data center, where it passes through a gateway server before being routed to the back-end applications.

The system delivers customer data to field service personnel in near real time, including the service history for a given customer or piece of equipment. It also tells the technician whether work is covered by contract or is billable and feeds data for billable work into the company's billing system. When parts are required, the Siebel field service application deter-

mines if the part is in stock and sends information on parts the technician uses to a legacy inventory application that in turn connects to the company's SAP supply chain management system.

For areas where wireless coverage is spotty, client devices either use a dial-up connection or store information and forward it later.

Weston says that better information has allowed field service staff to solve problems faster and complete more calls per day. Managers now can get up-to-date reports on what activities service personnel are engaged in and what steps were taken to satisfy customer requests. And by flagging the problems that require the most technician time, Pitney Bowes has been able to save money by scheduling proactive maintenance calls.

The company is nearly done rolling out a similar system in its Global Mailing Systems operation. The newer system features smart cell phones, RIM 957s, pocket PCs or other handhelds and GPRS services provided by several carriers. By using a mix of carriers and handheld devices with Antenna's SmartClient software, Pitney Bowes estimates that it can cover 95% of its territory, up from 85% with the previous system.

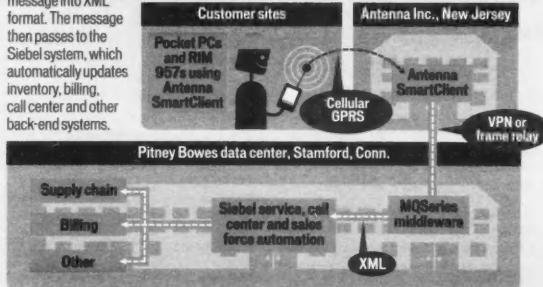
The Global Mailing unit's system is similar to that of the Document Messaging group, but it's completely separate. "There is a uniqueness between the organizations," Davis explains. "I'm more distributed [than the Document Messaging unit] with a greater breadth."

The Global Mailing rollout also was about five times more costly than that of the Document Messaging unit's system. The Global Mailing system uses more expensive Windows CE-based handhelds and required more extensive integration with the company's SAP, billing, call center and other applications. With this setup, Pitney Bowes hopes to create a single system of record and avoid re-entering the same data in different systems. With the resulting productivity gains, the company expects the system to pay for itself in three years.

Weston has some advice for others trying to build similar systems: Test the hardware and software thoroughly, make sure the devices have adequate battery life, and plan for the change management such a project requires. "The key," he says, "is understanding how these processes interact with the rest of your business and understanding that it's not just field service. It affects sales." **Q 4707**

Pitney Bowes' Service Management System

In Pitney Bowes' Global Mailing Systems division, field service staffers use handheld devices running Antenna SmartClient software to access customer information over a secure VPN connection. Information passes to a system running MQSeries middleware that converts the message into XML format. The message then passes to the Siebel system, which automatically updates inventory, billing, call center and other back-end systems.



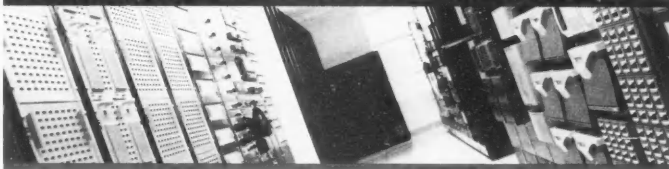


STORAGE NETWORKING WORLD

COMPUTERWORLD

Learn How to Achieve Storage Networking Success

October 25-28, 2004 • JW Marriott Grande Lakes Resort • Orlando, Florida



Visionary & Featured Speakers



JOHN HALAMKA
MD, MS, CIO, CareGroup Health System
CIO, Harvard Medical School



RAPHEAL HOLDER
Vice President, Shared Services Operations
Northrop Grumman IT



KEVIN ROLLINS
President & COO
Dell



SHINJIRO IWATA
CEO
Hitachi Data Systems



GREG REYES
Chairman & CEO
Brocade Communications Systems



NICK CARR
Former Executive Editor of the
Harvard Business Review
and author of "Does IT Matter?"

The Leading Executive Conference for:

- IT Management
- Storage Architects
- IT Infrastructure Professionals
- Business Continuity Planning Experts
- Data Management Specialists
- Network Professionals

To register or for more information,
visit www.snwusa.com/cw

For sponsorship opportunities,
call 1-888-239-4505

Attendees at Storage Networking World Will See Solutions From:

(as of 7/2/04)

PLATINUM SPONSORS



GOLD SPONSORS



CONTRIBUTING SPONSORS



MEDIA SPONSORS



PARTNER PAVILION



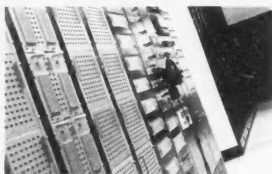
GOLF OUTING SPONSOR



Co-Owned and Endorsed by



Co-Owned and Produced by
COMPUTERWORLD



"... at SNW, you connect with folks you normally wouldn't meet and capitalize on the serendipitous exchange of ideas ..."

John Seely Brown
Former Director, Xerox Palo Alto Research Center (PARC), and former Chief Scientist, Xerox

"... SNW is a great venue for peer discussion ... an opportunity to provide feedback to vendors on what users need from them ... I sat down with my key vendors and shared information ..."

John Greer
Director, IT Infrastructure
Pacific Gas & Electric



Co-Owned and Endorsed by
SNIA

Co-Owned and Produced by
COMPUTERWORLD

Learn How to Achieve Storage Networking Success

- Get a Contemporary Overview of Today's Storage Networking Issues and Opportunities
- See How to Implement and Deploy the Latest in Storage Networking Technologies
- Hear the Latest in Enterprise Security
- Learn from Best Practices and Case Studies

Why You Should Attend

Are you responsible for managing your company's data center assets? Want to exchange innovative ideas and strategies with other executives who share the same objectives? Then attend Storage Networking World, where you'll network with and learn from renowned experts and the nation's top user executives.

What You'll Learn

In this executive-forum setting, you'll hear directly from executives and managers in user companies. They'll address a wide variety of today's burning issues like:

Selecting and Deploying Storage Networks

- SAN
- NAS
- CAS Options
- Deployment
- Data Migration
- Scalability
- Interoperability
- Implementation Considerations and Tips

Data Center and Infrastructure Considerations

- Operating System Platforms
- Utility/Grid Computing
- Bandwidth Requirements
- High Availability
- Infrastructure Tools
- Personnel and Training

Storage Security

- Infrastructure Protection
- Security Policies
- Advanced Recovery Solutions
- Preparing for External Physical Threats and/or Hacker Threats
- Disaster Recovery
- Public/Private Partnerships

Managing Storage Networking Solutions

- Management Tools
- Global Management
- Business Processes
- Compliance to Industry Standards

Managing Deployments of Existing and Emerging Technologies

- Procurement of Actual Products
- Project Management
- Implementation
- Education
- Management Policies
- Long-Term Management and ROI Expectations

Deploying Storage to Meet Industry Regulations

- HIPAA
- SEC
- FDA
- Sarbanes/Oxley Act/Patriot Act, etc.

CTO Insights

- Implementation Tips
- Roadmaps for Success
- Product Features Users Need To Know To Make Purchase Decisions Today
- New Technologies and Standards to Plan For
- Scalability, Interoperability, Speeds & Feeds, etc.

Enterprise Business Applications and Databases

- Storage for Business Intelligence
- CRM
- ERP
- HR
- Data Mining/Warehousing
- Applications Deployment Issues and Tips
- SLAs
- Technology Selection
- When to Replace Legacy Infrastructure
- CFO versus the CIO

Critical and Emerging Technology Topics

- Virtualization
- Security
- Utility Data Center
- Virtual Tape Libraries in Open Systems
- Cluster Distributed File Systems
- Policy Automation/Storage Administrator Work Flow Automation
- Changing Technology Economics Create New Applications of Technology
- Information Lifecycle Management/Disaster Recovery
- Object-Based Storage
- Blade Servers
- Data Protection

High Bandwidth Storage Applications

- Video Streaming
- Rich Media
- Image Capture
- Distance Learning
- Grid Computing for Government & Scientific Research
- Object-oriented Storage

Small Medium Business Considerations

- Technology Selection Criteria
- SI/Vendor Selection Criteria
- Operational Considerations
- Special Technology Features
- ROI/TCO
- Case Studies & Lessons Learned



See SNW's Interoperability & Solutions Demo

No other storage event gives you:
• 30-plus SNIA member companies collaborating on integrated solutions
• the opportunity to meet leading experts and engineers



Storage Analyst Briefing

In this fast-paced session, IDC's top storage analysts will examine companies' growing interest in deploying "cloud" storage solutions and assess its impact on storage components, systems, networks, management and services.

Conference At-a-Glance (subject to change)

For details, updates, and to register visit www.snwusa.com/cw

MONDAY, OCTOBER 25

9:30am - 11:30am Primer and Tutorial Tracks
11:30am - 1:00pm Luncheon
12:00pm - 5:00pm Pre-Conference Golf Outing
1:00pm - 6:00pm SNIA Technical Tutorials
1:00pm - 5:00pm IDC Analyst Briefing
7:00pm - 9:00pm Welcome Reception

TUESDAY, OCTOBER 26

7:00am - 8:00am Breakfast
8:00am - 12:00pm General Conference Sessions
12:00pm - 1:30pm Luncheon
1:30pm - 5:30pm General Conference Sessions
4:00pm - 5:30pm Concurrent Sessions
5:30pm - 8:30pm Expo with Dinner and Interoperability & Solutions Demo

WEDNESDAY, OCTOBER 27

7:00am - 8:00am Breakfast
8:00am - 12:00pm General Conference Sessions
12:00pm - 1:30pm Expo with Luncheon
12:00pm - 7:15pm Interoperability & Solutions Demo
1:30pm - 3:45pm General Conference Sessions
3:45pm - 5:15pm Concurrent Sessions
5:15pm - 7:15pm Expo
7:30pm - 9:00pm Gala Evening

THURSDAY, OCTOBER 28

7:30am - 8:30am Breakfast
8:30am - 12:00pm Concurrent Sessions
12:00pm Conference Concludes

LEARN FROM VISIONARIES AND IT USER EXECUTIVES



JOHN HALAMKA
MD, MS, CIO
CareGroup Health System
CIO, Harvard Medical School



RAPHEAL HOLDER
Vice President
Shared Services Operations
Northrop Grumman IT



ROD MUELLER
Manager of Technology
and Infrastructure
International Paper



STEVE DUPLESSIE
Founder and Senior Analyst
Enterprise Storage Group



JON WILLIAM TOIGO
CEO and Managing Principal
Toigo Partners International LLC



NICK CARR
Former Executive Editor of the
Harvard Business Review
and author of "Does IT Matter?"



**The Ritz-Carlton
Golf Club**
Orlando, Florida

Pre-Conference Golf Outing Complimentary for Registered IT Users

The Pre-Conference Golf Outing at The Ritz-Carlton Golf Club located adjacent to the JW Marriott Grande Lakes Resort, is complimentary (\$125 value) for registered IT End-Users (other participants, including sponsors and vendors, may play on an "as available" basis and are responsible for all applicable golf outing expenses).

For details contact Michael Meleedy at 1-508-820-8529

SPONSORED BY
Quantum



**JW Marriott
Grande Lakes Resort**
Orlando, Florida

Hotel Reservations and Travel Services

IDG Travel is the official travel company for Storage Networking World. They are your one-stop shop for exclusive discounted rates on hotel accommodations.

To reserve your accommodations, visit:
www.etcentral.com

You can also call our conference housing line at:
1-800-340-2262 (or 1-508-820-8686)





**STORAGE
NETWORKING
WORLD**

COMPUTERWORLD

October 25-28, 2004
JW Marriott
Grande Lakes Resort
Orlando, Florida

Application for Conference Registration

Fax this completed application to 1-508-820-8254. Or apply online at: www.snwusa.com/cw

Your business card is REQUIRED to process your application

Please affix your business card to this space prior to submitting your application. Applications submitted without business cards will not be processed.

Questions? Call 1-800-883-9090

If not indicated on your business card, please provide the following required information:

Corporate Email Address _____

Corporate Website _____

Registration questions?

Call 1-800-883-9090 or email snwreg@computerworld.com

Need accommodations?

Reserve them at: www.etcnet.com

Please call 1-800-340-2262

or email: eventhousing@idg.com

Please check ONE of the following:

☐ **I am an IT End-User***
(Complete Attendee Profile below)

* IT End Users are defined as those who are attending Storage Networking World with an intent (and an IT spending budget) to primarily buy/lease/hack/own software/services, etc. from our conference sponsors and not themselves as IT end user. As such, account representatives, business development personnel, analysts, consultants and anyone else attending who does not have IT purchasing influence within their organization are excluded from the IT End-User designation. Interpretation and enforcement of this policy are at the sole discretion of Computerworld.

☐ **I am a Channel Partner/
Integrator/Consultant**
(Complete Attendee Profile below)

By participating in SNW's Channel Partner/Integrator registration package, registrants may enjoy the following benefits. One company representative may receive a full conference pass to SNW Fall 2004, additional company representatives pay \$695 each for full conference passes; company may invite up to five IT User customers to attend SNW Fall 04. Users must be strictly compliant with IT User definition on the supporting form. Companies registering for this package intended in getting the SNIA are eligible to receive a \$2,000 discount, provided that membership is applied for prior to January 1, 2005.

Attendee Profile: This section MUST be completed by IT End-Users and Channel Partners/Integrators/Consultants only (optional for all other registrations) in order to process your application.

Your Business/Industry

- ☐ Transportation/Utilities
- ☐ Mining/Oil/Gas
- ☐ Non-Profit/Trade Association
- ☐ Media/Publishing
- ☐ Banking
- ☐ Finance
- ☐ Accounting
- ☐ Insurance
- ☐ Real Estate
- ☐ Telecommunications
- ☐ Wholesale/Retail (non computer)
- ☐ Computer Service Provider
- ☐ Advertising/Marketing/Public Relations
- ☐ Entertainment
- ☐ Education
- ☐ Food Industry
- ☐ Government/Military
- ☐ Healthcare/Medical Services
- ☐ Travel/Hospitality/Recreation
- ☐ Manufacturing (non IT)
- ☐ VAR/AVS/ASP/System Integrator
- ☐ Channel/Integrator/Consultants Only
- ☐ Industry Consultant/Storage Solution Integrator
- ☐ Channel/Integrator/Consultants Only

- ☐ Manufacturing (IT/Channel/Integrator/Consultants Only)
- ☐ Computer Retailer/Dealer/Wholesaler
- ☐ Channel/Integrator/Consultants Only
- ☐ Software Development (Storage)
- ☐ Channel/Integrator/Consultants Only
- ☐ Other Computer Related (Storage)
- ☐ Channel/Integrator/Consultants Only
- ☐ Other

Your Job Title/Function

- ☐ CEO/CDO/Chairman/President
- ☐ CIO/CTO
- ☐ VP/AM/Director
- ☐ Sr./IT Director/Manager
- ☐ Other Sr./IT Department Manager/Supervisor
- ☐ Other Corporate/Business Manager
- ☐ CEO/CDO/Chairman/President
- ☐ Channel/Integrator/Consultants Only
- ☐ CPO/Computer Programmer
- ☐ Channel/Integrator/Consultants Only
- ☐ VP/AM/Director (Channel/Integrator/Consultants Only)
- ☐ Sales/Marketing/Product Staff
- ☐ Channel/Integrator/Consultants Only
- ☐ GOV/CTO/Other Sr./IT Manager
- ☐ Channel/Integrator/Consultants Only
- ☐ Engineering Staff (Channel/Integrator/Consultants Only)

The one item that best describes your involvement in the IT purchase process

- ☐ Approve the purchase
- ☐ Approve the budget
- ☐ Initiate the purchase
- ☐ Evaluate/recommend products, brands, vendors
- ☐ Identify/establish the need to purchase
- ☐ All of the above

Number of employees in your entire organization (ALL locations)

- ☐ Over 10,000
- ☐ 5,000 - 9,999
- ☐ 1,000 - 4,999
- ☐ 500 - 999
- ☐ Less than 500

What is the estimated annual revenue of your entire organization?

- ☐ Over \$10 Billion
- ☐ \$1 Billion - \$9.9 Billion
- ☐ \$500 Million - \$999 Million
- ☐ \$100 Million - \$499 Million
- ☐ Less than \$100 Million

Your organization's annual IT/IS budget for all IT/IS products, or if you are a Channel/Integrator/Partner or Consultant, what is the annual dollar value of IT products/services you sell/resell/recommend/influence for purchase by your customers/clients.

- ☐ Over \$1 Billion
- ☐ \$500 Million - \$999 Million
- ☐ \$100 Million - \$499 Million
- ☐ \$10 Million - \$99 Million
- ☐ \$1 Million - \$9.9 Million
- ☐ Less than \$1 Million

Annual company IT budget (storage products and services)

- ☐ Over \$1 Billion
- ☐ \$500 Million - \$999 Million
- ☐ \$100 Million - \$499 Million
- ☐ \$10 Million - \$99 Million
- ☐ \$1 Million - \$9.9 Million
- ☐ Less than \$1 Million

Would you like to receive information about playing in the golf outing on Monday, October 25th?

- ☐ Yes
- ☐ No

☐ **My company is Sponsoring/
Exhibiting at SNW**

- ☐ **\$585** (through September 14, 2004)
General Conference Package (October 26 & 27)
(Includes General Conference Sessions, Expo, Meals & Receptions)
- ☐ **\$1,290** Total 4-Day Package (October 25, 26, 27, 28)
(Includes General Conference, plus Technical and Business Tracks, SNIA-produced Tutorials, SNIA-Certification "Test-Ready" Courses)

- ☐ **\$1,295** (after September 14, 2004)
General Conference Package (October 26 & 27)
(Includes General Conference Sessions, Expo, Meals & Receptions)
- ☐ **\$1,690** Total 4-Day Package (October 25, 26, 27, 28)
(Includes General Conference, plus Technical and Business Tracks, SNIA-produced Tutorials, SNIA-Certification "Test-Ready" Courses)

As a sponsor, you may be eligible to attend using a registration provided with your sponsorship. (If those registrations have already been assigned/used, then you may register at the prevailing rates above.) See the current list of sponsors at www.snwusa.com. Questions? Call 1-800-883-9090 or email snwreg@computerworld.com.

☐ **I am a representative of a Non-Sponsoring IT Vendor Company**

☐ **\$5,000 Business Development Professional Package**

for Sales, Marketing and Business Development Professionals. (Includes General Conference Sessions, Expo, Meals & Receptions)

Vendors are encouraged to participate in Storage Networking World through sponsorship. (Details are available by calling Ann Harris at 508-820-8667.) Alternatively, vendors (as well as other "non-IT end user" professionals as defined by Computerworld) may apply for registration at the "non-sponsoring vendor" rate of \$5,000. Determination of what constitutes a "non-sponsoring vendor" registration is made exclusively by Computerworld. Please call 888-239-4505 with questions.

☐ **I am a Financial/Equity Analyst and/or Venture Capital Professional**

☐ **\$1,290** (through September 14, 2004)

Total 4-Day Package

(Includes General Conference, plus Technical and Business Tracks, SNIA-produced Tutorials, SNIA-Certification "Test-Ready" Courses)

☐ **\$1,690** (after September 14, 2004)

Total 4-Day Package

(Includes General Conference, plus Technical and Business Tracks, SNIA-produced Tutorials, SNIA-Certification "Test-Ready" Courses)

☐ **I am a qualified member of the press.** I can verify my press credentials.

Press should call Erin Keefe at 1-781-915-5009 to register.

Payment Method

☐ **Check** (checks must be received by October 5, 2004 payable to: Computerworld)
Mail to: Computerworld, Attn: Pam Malinowski, 500 Old Connecticut Path, Framingham, MA 01701

☐ **American Express** ☐ **VISA** ☐ **MasterCard**

Account Number _____

Expiration Date _____

Card Holder Name _____

Signature of Card Holder _____

Cancellation Policy (All of the following require written notification by October 5, 2004.)

In the event of cancellation, the registrant has three options:

- (1) He or she may substitute another attendee for this conference.
- (2) He or she may transfer his/her registration to the Storage Networking World Spring 2005 conference.
- (3) The registration fee will be refunded, less a \$250 service charge (if written notice is received by October 5, 2004).

Please send cancellation requests via email to: snwreg@computerworld.com

**Please fax this completed application
to 1-508-820-8254**

MIKE STREB RECENTLY found himself with a problem that's common to IT managers who consolidate data from file servers on network-attached storage devices. After years of growth, he wound up with 100 different NAS file systems to manage and faced increased downtime when he had to add application servers or update code.

The answer for Streb and a growing number of users like him is to pool or virtualize the NAS infrastructure.

Streb, vice president of IT services at Warner Music Group, installed intelligent switches on his network to generate a global namespace, or distributed file system, that creates a logical layer between servers and the NAS boxes that store their files. A global namespace spans multiple file systems but appears to end users as a single local drive on their computers.

Other storage administrators are opting for an appliance that sits in front of NAS devices and creates a logical view by pooling multiple NAS filers behind it. Policy-based engines contained in intelligent switches and appliances from companies such as Acopia Networks Inc., NuView Inc. and BlueArc Corp. can automatically balance I/O streams and capacity between servers and increase or move storage volumes without disrupting workflow.

Complication of NAS Growth

The NAS market has grown to \$14.7 billion because the technology is easy to install and manage, according to market research firm IDC. But as storage needs grow, companies continue to install box after NAS box, and each requires individual management.

Over the past two years, adoption of NAS virtualization technology has been slow, according to Arun Taneja, an analyst at Taneja Group Inc. in Hopkinton, Mass. But interest among users has picked up in recent months, mainly because of the maturity of the NAS

SIMPLIFYING NAS MANAGEMENT

Companies are using technologies that virtualize multiple network-attached storage systems into a storage pool. **BY LUCAS MEARIAN**

market. Now that many companies have "hundreds" of NAS boxes to manage, individual administration has become a nightmare, Taneja says.

To deal with that problem, New York-based Warner Music last month purchased two ARX1000 NAS virtualization switches from Acopia to handle millions of .wav, MP3 and graphics files on 128 Unix and 350 Wintel servers. Streb also plans to install four Celerra NS600 NAS servers from EMC Corp. as back-end storage.

Streb has five storage administrators who manage the distribution of files across Warner Music's NAS devices. That task alone takes up about 20% of their time, he estimates. "Now, through a policy engine, I can migrate the data from one box to another and take a brief outage by pointing the global namespace somewhere else, and the user doesn't even know it because it's all done behind the scenes," Streb says.

Streb is testing Acopia's switches on 20 Wintel servers and says he plans to complete the installation over the next two weeks. He also says that he hopes virtualization will open his data

center to more storage vendors.

"In the past, it's been really complicated for me to introduce something from BlueArc or Network Appliance without creating too much management pain for me," Streb says. "Now I feel comfortable opening up the door to additional storage vendors and letting them compete more."

Different Approaches

Acopia's switches sit in-band between end users and file servers or NAS devices in the I/O stream, while products such as NuView's StorageX software reside on a Wintel server out of band, directing files to the appropriate NAS device or volume within a file server. StorageX is resold by Network Appliance Inc. under the name Virtual File Manager (VFM).

Mike Karp, an analyst at Enterprise Management Associates Inc., a consulting firm in Boulder, Colo., says the argument for in-band versus out-of-band devices is moot, and users should pay more attention to how well a device or software eases management of NAS devices.

"Typically, the knock on in-band

technology is that it eventually becomes a choke point, but I rarely talk to a company that says 'I've maxed out pipeline to my NAS,'" Karp says. "Clearly, what you need is some kind of common interconnect, so commands — no matter what kind of storage you have — go out and manage the various units in the storage pool."

One problem with managing multiple NAS devices, Karp says, is that file servers based on Windows use the Network File System protocol to communicate over a network, and servers based on Unix or Linux use the Common Internet File System. The industry should agree on a standard way for servers to make requests for files or services over the network, he says. In the meantime, storage managers continue to virtualize Unix and Windows environments separately.

Clay Raedeker, a systems administrator at Bectel SAIC Co., says he recently purchased VFM and a second FAS960 NAS file server from Network Appliance to help control file distribution from more than 70 file servers with a combined total of 12TB of data. Las Vegas-based Bectel SAIC is the prime contractor for the U.S. Department of Energy's program to use Yucca Mountain in Nevada as a repository for spent nuclear fuel.

Raedeker says he currently has to come to work in the early morning when no one is accessing files so he can spend two or more hours remapping users when he adds servers or expands capacity.

"We're trying to map individual users to individual shares and individual servers, and it becomes extremely difficult to manage," he says. "Just contacting people and putting proper notices out is hard enough."

With the Network Appliance installation, Raedeker says his staff will be able to map to a shared file in a computer at any time, without having to specify the storage device it's on and "without having to interact with users at all." **47734**

NuView Inc. Houston

PRODUCT: StorageX

HOW IT WORKS: The appliance creates a global namespace

WHERE IT RESIDES: On Windows 2003 server out of data path

PRICING: \$4,000 per NAS system

BlueArc Corp. San Jose

PRODUCT: SiliconServer Titan

HOW IT WORKS: Virtualization engine resides on NAS box in application-specific integrated circuit chip

WHERE IT RESIDES: On NAS box in data path

PRICING: \$100,000+, including storage

Acopia Networks Inc. Lowell, Mass.

PRODUCTS: The high-end ARX6000 and the fixed-configuration ARX1000

HOW IT WORKS: Switches in data path map file requests to NAS

WHERE IT RESIDES: On IP network in data path

PRICING: The ARX1000 lists for \$45,000; the ARX6000 lists for \$150,000

Network Appliance Inc. Sunnyvale, Calif.

PRODUCT: Virtual File Manager

HOW IT WORKS: Creates a global namespace, aggregating files located on NAS systems and Windows servers to present a single logical "pool" of storage

WHERE IT RESIDES: On NAS box in data path

PRICING: \$2,000-\$50,000 per filer, roughly \$2,000 per terabyte of capacity supported

THE COMING ROBOT REVOLUTION

They could fight wars, drive cars and patrol data centers. By Lucas Mearian

FUTURE WATCH

Robots, from mechanical dogs that can learn new tricks to automated vacuum cleaners that avoid furniture, are steadily becoming a part of everyday life. But the real robot boom lies just ahead, experts say.

In the future, robots could help determine the outcome of wars and identify problems in data centers. Office buildings may come to life as they use

Wi-Fi to dispatch robots to control human access, test heating and cooling systems, and fetch tools for workers.

Computerworld recently spoke about the future of robots with three experts: **Chuck Thorpe**, director of Carnegie Mellon University's Robotics Institute; **Jeanne Dietsch**, CEO of Mobile-Robots.com in Nashua, N.H.; and **Vijay Kumar**, a professor in the Department of Mechanical Engineering and Applied Mechan-

ics at the University of Pennsylvania. Here's what they said:

WHERE WILL ROBOTS SERVE IN THE FUTURE?

KUMAR: They'll fight our wars. My robots will fight your robots. It's like playing chess. It'll be an expensive game, but I think it will minimize loss of life. I don't know it's something our leaders want to hear about, though.

WHAT'S THE FUTURE OF ROBOTS IN THE SERVICES SECTOR?

THORPE: That's the real frontier for robots — getting them out of the manufacturing world and interacting much more with people in our day-to-day chores. That's a little tougher. If you think about an assembly line, it's set up so that everything is predictable. If you think about the job of creating a robot butler to operate in your house, the difference between pile of clothes which should be picked up and a sleeping cat which shouldn't be picked up is a little bit tricky.

The manipulation skills required to make a bed — flipping up the corner of the mattress and tucking in a sheet so it looks straight — is complicated. Some of those jobs will take a long time before robots can really do them as well as people do them.

To really have a humanoid robot walking around like C-3PO or like Rosie on *The Jetsons* is still a long ways off.

DECADES?

THORPE: Probably.

CAN ROBOTS HELP INFORMATION TECHNOLOGY?

DIETSCH: Hewlett-Packard uses our PatrolBot in their data centers. It's got temperature sensors. It drives around several times a day, and the data from these patrols is used to create 3-D models of the heat in the facility. If there's a problem in the facility, the computer or a human can send the robot out to check on it.

Our robots are computers on wheels. When programmers start realizing, "Oh, I can drive my computer around and make it do things," they'll come up

CHUCK THORPE

Director

Carnegie Mellon University's Robotics Institute
Pittsburgh



JEANNE DIETSCH

CEO

Mobile-Robots.com
Nashua, N.H.



VIJAY KUMAR

Professor

Department of Mechanical Engineering and Applied Mechanics
University of Pennsylvania



with all sorts of interesting things. For example, they could keep track of any asset in the facility based on RFID tags.

WHAT'S HARD ABOUT MAKING ROBOTS ACT LIKE HUMANS?

THORPE: I think you could turn that question around and say, "Wow, humans are a lot more complicated than we thought."

We're striving for a couple different things with robots. Sometimes we're trying to make them very much like humans, and sometimes we're trying to make them be a lot better than humans. Where we've had our greatest success is when we let the robots be robots and do what they're best at and let humans be humans and do what they're best at.

A couple of guys from my lab have spun off a company that makes a little TV camera that watches the road as you're driving. It doesn't drive your car, but it's there to watch, and if you start to get sleepy and start to drive off the road, it will beep at you and wake you up before you become an accident statistic.

WHAT ELSE ARE YOU WORKING ON?

THORPE: We've got 61 faculty members with 120 projects. We've got robots doing every-

thing from cleaning paint off ships to search and rescue in hazardous environments. We have snake robots that can crawl through skinny little holes, and great big military scout robots. We have teams of robots playing soccer. That's a great way to study teamwork: How do robots coordinate to tackle a project? In the latest version of that, we have a team that consists of robots and people; how do robots and people collaborate to solve a difficult task?

CAN YOU SPECULATE ON SOME OF THE MORE FAR-OUT APPLICATIONS FOR ROBOTS?

KUMAR: My colleagues would argue the biggest opportunity for robots is in entertainment.

There are many, many prototypes of robots that are intended to be domestic companions. They walk like humans and talk like humans, but unlike pets, they don't dirty up your apartment.

DIETSCH: Our robots are made to work indoors. We're working next toward working outdoors. Everyone thinks GPS has solved the problem for robots, but it hasn't at all. If you're under tall buildings or trees, GPS is not reliable.

The problem with working outdoors is that you're working on three-dimensional terrain. Going from building to building, depending on terrain, is not so bad. I'm hoping we can do that in one to two years. Following streets and sidewalks — if we can do that reliably in three or four years, that will be good. But we'll still not be able to avoid cars going 40 mph.

THORPE: Certainly, within 25 years, we'll have robots assisting surgeons to be more precise, robots enabling elderly people to live in their houses longer and not have to go into nursing homes, [and] robots doing a lot of the dull jobs we don't like to do, so we can have more fun and do the more interesting jobs. **47844**

REMOTE BRAINS

Robots don't have to carry their brains with them. See why online:

QuickLink 47835
www.computerworld.com



This 18-in.-high robot rolls around HP data centers and finds hot spots, using temperature sensors.

Magazine Of the Year.

**COMPUTERWORLD HAS BEEN NAMED
MAGAZINE OF THE YEAR FOR 2004.**

Every year the prestigious American Society of Business Publication Editors (ASBPE) selects one publication with 80,000 or more subscribers to receive this top honor. The award can go to any business publication in any industry category, and we won! We are proud that our ongoing commitment to editorial integrity, audience focus and in-depth coverage has been recognized by this auspicious award.



COMPUTERWORLD

THE VOICE OF IT MANAGEMENT™

Four Steps to a Secure Budget

A seasoned security manager offers hard-nosed advice on how to get critical IT security projects funded. By Roger Foix

AFTER working as an in-house security manager in the financial services industry for many years, I recently moved to consulting work. This will give me the opportunity to work in a variety of industries (my current contract is with a company in the health care industry) and projects.

I've spent the past few days thinking about the many issues I face, trying to decide which one to discuss in this, my first column. In the end, it was an easy decision: extortion. I'm not talking about preventing employees or outsiders from stealing funds. I'm referring to my ability to "extort" appropriate funding from management.

There are less-cynical ways of looking at the budgeting process, but my experiences over the past few years at different companies have made getting blood out of a stone look simple in comparison.

Many security managers labor under the misapprehension that the budget process consists of working out how much you need, spending a few weeks coaxing your figures into the bizarre formats that the finance group requires, then defending your important projects in meetings. But my successful budgets have been the result of a different process — one in which I laid the groundwork well ahead of time. Here are four steps I follow to obtain funding from that parsimonious corporate bean counter.

Make the Business Case

Start by going back to your se-

curity basics and calculating your risk profile. Determine the potential financial loss arising from each of your threats, and multiply that by the annualized percentage likelihood of the loss occurring to get the annualized loss expectancy (ALE). Then demonstrate how much your project will reduce the ALE — and how much money it will save the company.

Assuming you have a sound business case, document this clearly, explain your reasoning in great detail, and then submit it to the finance people. It will get rejected almost immediately,

of course, because no one in finance will understand a word of it. But don't worry; you have to go through this step only to show that you've done your homework and to lay the groundwork for more productive tactics later on.

Introduce FUD

Next, use fear, uncertainty and doubt to your advantage. FUD is the most important acronym to salespeople hawking IT security wares, and you are trying to sell your own IT se-

curity services to the corporate bean counters. Sow fear ("Did you hear about that hacker who broke into NASA? I hope that doesn't happen to us."), uncertainty ("Yes, I know we spent \$500,000 on securing our network perimeter last year, but we need to make sure it's working.") and doubt ("70% of security breaches are internal. I wonder who the criminals are in our company?"). Sometimes this beginner's tactic works, but any chief financial officer who has been around the block a few times will blow FUD out of the water. Still, it's still worth trying just to see what answers you get. You can always use those responses the next time an IT security salesperson comes calling.

Befriend Your Auditor

The next time you pass an auditor in the corridor, give him a big smile. These people write long-winded reports, and while no one reads the main text, everyone reads the executive summaries. Then these reports go on file, as do management's responses. Best of all, the auditors eventually check back to see whether management has addressed the issues the reports have raised.

While the threat of a hacker attack or a virus infestation makes the budget gods nervous, the thought of three years' worth of audit reports pointing a finger at their incompetence will give them night sweats. A scared budget-setter is a generous budget-setter, so your internal auditors are a major ally. The same goes for external auditors and your compliance team, too, if you're in a regulated industry.

So make friends with these people. That should be easy, since everyone else tries to avoid them. Then drop a few choice lines into the conversation like, "I'd really appreciate your opinion on our firewall setup." In no time at all, you'll have auditors crawling all over the areas in which you want to spend money. Six months later, senior management will get a report saying how dire the

problems are in that area. Then, seven months later, you'll submit your budget request for money to address those issues.

Choose Your Allies

Every company has its alpha dogs, and they're rarely in IT. You may think that the CIO is at the top of the food chain, but in budget meetings, everyone complains to him about how much IT spends and how the help desk still can't sort out the small issues. This discussion invariably comes up just before his \$17.5 million request to fund a project that even he doesn't understand properly.

The CIO has a hard fight, so you must look elsewhere to find your alpha dogs. In software houses, they're the salespeople; in investment banks, they're the senior traders; in pharmaceuticals, they're the research and development folks. Set up meetings with them and tell them what you need, using no more than two technical terms in any one-hour meeting. Then tell them what might happen to the company if security fails.

Three months later, when the budget cycle starts, submit your request to the CIO. He'll go into meetings expecting the usual beating, but this time the alpha dogs will be demanding to know why he isn't spending more on security. He'll have the answers on hand, you'll get your funding, and everyone will go away happy — or as happy as anyone can be after a three-hour budget meeting.

So there you have it: the four key steps to budgeting success. Good luck, and remember to get started now. If you do, you may just be in time to get the money you need for next year. ▀

WHAT DO YOU THINK?

This week's journal is written by a real security manager, Roger Foix, whose name and employer have been disguised for obvious reasons. Contact him at roger.foix@hushmail.com or join the discussion in our forum: [QuickLink #1590](#)

To find a complete archive of our Security Manager's Journals, go online to [computerworld.com/secjournal](#)

SECURITY LOG

WHERE THE MONEY IS

Average annual growth rate in base pay, from 2003-04, by job title:

Manager, security

9%

VP/director, security

8.9%

Web security manager

8.4%

Security systems administrator

7%

Senior security analyst

5.9%

SOURCE: FOOTER PARTNERS LLC, NEW CANAAN, CONN.
[WWW.FOOTERPARTNERS.COM](#)

SpamKiller Gets Mobile Security Tool Updated

Information Security Corp. in Deerfield, Ill., has released SecretAgent Mobile for Microsoft Pocket PC 2002 and Windows Mobile 2003. SecretAgent manages and secures documents stored on handheld devices. The new version, available now, includes support for ANSI-compliant digital signatures, has new workflow features, provides automated key history management and enables shared viewing and editing of encrypted, archived documents. Pricing starts at \$59.95 per device.

SpamKiller Gets New Rules

McAfee Inc. has updated the rules set for its SpamKiller products. The monthly rules updates are now more granular, according to the Santa Clara, Calif.-based company. New features include 100 rules that follow the Federal Trade Commission's labeling standards for sexually explicit spam, URL rules that identify e-mail with Web addresses embedded in the body text and a rule to detect the Sobor.h spambot Trojan horse, which propagates hate-mail spam. The updates, which work with SpamKiller for Mail Servers and SpamKiller appliances, will be available this month.

BRIEFS

MontaVista Readies Linux Tool Kit

Next month, MontaVista Software Inc. will unveil its Linux Professional Edition Application Developers Kit, which is designed for building applications to run on MontaVista-embedded Linux. The Pro ADK tool set is built around MontaVista's Eclipse-based integrated development environment and includes core MontaVista Linux software libraries and header files, according to the Sunnyvale, Calif.-based company. Developers can use the tool kit on Windows, Solaris or Linux workstations. Pricing starts at \$3,000 per developer.

IBM Unit Moves To Hyades Platform

IBM's Rational Software division announced last week that it will standardize its suite of automated software-quality tools on the Hyades open-source platform. The Hyades project is a subgroup of the Eclipse open-source project that IBM spun off as an independent, nonprofit corporation. By supporting Hyades, Rational plans to provide third-party vendors and IT organizations with a standard platform on which to build products that will work with its testing tools.

NLayers Aims For App Optimization

NLayers Inc. last week announced nLayers InSight, an appliance designed to provide application optimization. Working without agents, the appliance tracks application relationships, dependencies, usage, demand and service levels over time. InSight provides policy-based notifications, alerts and recommendations through a troubleshooting dashboard, according to San Jose-based nLayers. The appliance also tracks application usage, demand and service levels. Available now, InSight costs \$45,000 for a perpetual license or \$2,438 per month for a subscription.

TOMMY PETERSON

E-voting's Rush To Failure

IN THE WAKE OF the painful experiences of 2000, the choice of the mechanism used to record and tally votes in this year's presidential election may be almost as controversial as the battle between the candidates. Unfortunately, a

hefty portion of state and local jurisdictions have prematurely adopted electronic voting systems.

E-voting in this year's election is a terrible idea because of both real technical limitations and the perception that the systems are unreliable and vulnerable to tampering. That's something of a problem, considering more than 30% of all voting in the election will be done on electronic machines.

This isn't just a public relations issue or one that will go away when citizens get used to the technology. A mounting record of problems with e-voting has tarnished elections in Georgia, California and Texas, among other places, and seems to justify widespread voter skepticism.

Part of the problem arises from the complexity of e-voting systems. The code that makes up these systems is so large that there's no efficient way for election officials to ensure that it's free of malware or to completely debug it, according to testimony Johns Hopkins University professor Avi Rubin gave before the U.S. Election Assistance Commission this spring.

The technology simply isn't ready to be used for the most basic and critical function in any democracy. And even if it were, the processes and protocols needed to monitor even high-performing systems aren't in place, judging by the report from IT security experts assembled by the Brennan Center for Justice at New York University School of Law and the Leadership Conference



TOMMY PETERSON is Computerworld's Technology editor. Contact her at tommy.peterson@computerworld.com.

on Civil Rights. The panel's mandate was to devise a strategy for ensuring the security of touch-screen direct-recording electronic (DRE) voting systems.

The recommendations of the group are all eminently sensible: Train all election workers on security procedures. Develop random testing procedures to detect malicious code or bugs in e-voting software.

Create and follow standardized procedures for responding to security threats and incidents. You get the idea. But it's a little alarming that the panel had to make these recommendations to fill an existing procedural gap.

To be fair, the chief recommendation of the panel isn't so obvious, and following it is essential to the success of any e-voting system. According to the report, each jurisdiction that plans to use an e-voting system should hire a well-qualified independent security group to evaluate the system's potential for failure and vulnerability to attack. The outside security team should be free of ties to systems vendors and be given unlimited access to software code and configuration information.

This is precisely the right approach to both harden the defenses of DRE voting systems and put to rest some of the public's basic fears about vote tampering. If an expert outsider can take a hard look at the code on a Diebold voting system, fewer citizens will be worried about, say, whether Diebold Chairman Walden O'Dell's support of President Bush (he's a big fund-raiser

for Bush's campaign) might have influenced the system's design.

But most jurisdictions haven't put any of the recommendations in place, and it's too late to get it all done by November, as has been pointed out by a chorus of security experts [QuickLink 47931].

The headlong rush to e-voting grew out of demands for reform following the chaos of the 2000 presidential election. The \$4 billion allocated by the federal government to enact those reforms got the attention of vendors that were eager to make a big sale. It's time to slow down, even if it means shelving e-voting until 2008.

Setting up a parallel paper trail for voters within an e-voting system, as some have suggested (including Computerworld's Sharon Machlis — see QuickLink 47905), is not the answer. That would be cumbersome, threaten the secrecy of the ballot and still leave the system open to tampering. Which is why a federal judge's decision last week to uphold California's decertification of DRE systems until vendors provide voter-verifiable paper audit trails and other security improvements [QuickLink 48022] isn't enough.

In four years, processes could be in place that force transparency on all vendors of e-voting systems. The use of blind-signature encryption protocols could preserve secret balloting while giving voters a means to verify election results. There's not much upside in using e-voting systems for the election that's less than four months away, and the risks are enormous.

If you thought pregnant chads in the 2000 election were bad, wait until you see what a determined hacker could do to the democratic process this fall. That is, of course, if we're lucky enough to detect the attack. **48002**

WANT OUR OPINION?

For more columns and links to our archives, go to www.computerworld.com/opinions



From: making financial information safer than ever

To: winning worldwide recognition for doing so



Congratulations, Depository Trust & Clearing Corporation.

Computerworld's 21st Century Achievement Award for the world's best IT application in finance, insurance, and real estate goes to DTCC for 2004. DTCC and EMC Corporation partnered to develop an innovative business continuity strategy—implementing long-distance, automatic asynchronous data replication capabilities and remote data center capacity that will ensure the continuing safety and soundness of U.S. financial markets.

Learn more about how DTCC is protecting critical information at www.EMC.com/DTCC.

EMC, EMC logo, and where information lives are registered trademarks of EMC Corporation. © 2004 EMC Corporation. All other trademarks are property of their respective owners.

MANAGEMENT

07.12.04



Q&A Managing 'Real' Risk

Risk management is an idea whose time has finally come, says Cutter Consortium analyst Tom DeMarco (left). He explains how project managers can help their businesses embrace risk and reap the rewards. **Page 34**

Q&A Moving Targets

Companies go through innovation stages, so IT needs to provide the right help at the right time, says Geoffrey A. Moore of TCG Advisors. Depending on the stage, the company may need IT to support collaboration or hypergrowth or to help break down silos. **Page 35**

OPINION Regenerating IT

Amputating a "broken" IT shop through outsourcing squanders precious time and resources, says Bart Perkins. You're better off investing in a sound project to bring the failed organization back to life. **Page 38**



LAST NOVEMBER, after a deluge of customer complaints about unintelligible English, lengthy telephone waits and poor service, Dell Inc. rerouted technical support for its U.S. corporate clients from a call center in India to facilities in Texas, Idaho and Tennessee.

Weeks later, Lehman Brothers Inc. followed suit, shifting offshore help desk support for the financial firm's internal users back to the U.S.

Another company, Fremont, Calif.-based Everdream Corp., pulled the plug on its offshore help desk center in Costa Rica in April. The reason: plummeting customer satisfaction.

Elsewhere, a decision by the Wash-

ington State Health Care Authority to use offshore labor for a major IT contract prompted legislation that would effectively bar state agencies from future use of offshore contractors.

For CIOs, offshore outsourcing used to be a pretty straightforward dollars-and-cents decision — a relatively modest financial investment in cheap foreign labor in return for significantly lower ongoing operational costs.

Not anymore. Backlash from employees and customers has triggered productivity and revenue losses, plus more than a few public relations nightmares and political donnybrooks.

Clearly, U.S. companies are in the hot seat when it comes to offshore out-

sourcing. But despite the backlash, including the ongoing public outcry over lost U.S. jobs and the heated rhetoric of politicians in a presidential election year, most businesses have no intention of scaling back or delaying their offshore plans. Indeed, 86% of 96 attendees polled at a Gartner Inc. outsourcing conference in May said none of the backlash factors would cause them to change their offshore plans.

The reason is pure and simple: economics.

"Customers are constantly pursuing cost benefits. It's a constant, like gravity," says Mike Hoyt, CEO of Paradigm Works Inc., a chip design company in Andover, Mass., that sends design and

IT work to India. "To outsource offshore is not a political decision on the part of the company. It's an economic decision with political ramifications."

Political Problems

But those ramifications are considerable, and mounting backlash from employees, corporate partners and consumers substantially increases the risks involved in offshore outsourcing, says Alfred Ricci, who heads the newly launched sourcing management office at Union Bank of California (UBOC) in Los Angeles. A technical decision to move work offshore could "absolutely" trigger enough of a backlash to affect a company's stock price, Ricci says.

How to combat offshore outsourcing backlash. *By Julia King*

DamageControl

DamageControl

As an example, he mentions California Senate Bill 1386 [QuickLink 47344], which requires a company to inform customers if their privacy may have been compromised. "A violation of that law [by an offshore outsourcer] would have a tidal-wave effect, which could result in a downgrading of the bank's creditworthiness," he notes.

To mitigate that risk and minimize damage, the UBOC created a dedicated sourcing office, which reports to an executive vice president and handles not only all contracts for professional services and staff augmentation, but also all strategy and communications regarding offshore plans.

Internal Issues

Two of the thorniest backlash problems around offshore outsourcing are rumors and employee flight, Ricci says. "The first reduces productivity, and with the second, the bank loses skills and knowledge," he notes. The sourcing office helps prevent both problems.

It assists senior management in preparing presentations to line employees about the effect outsourcing will have on them. It also provides managers with a list of answers to frequently asked questions so all information is consistent. Moreover, the bank has a person dedicated to tracking legislation and regulatory updates that could affect how and where the company outsources IT work.

Ricci emphasizes that the cost of running the sourcing office is "100% overhead. But the way you mitigate some of the risks associated with outsourcing is to plow some of the cost savings back into the monitoring and management of the [outsourcing] relationship." That includes managing employees and customers. "Basically, the cost savings is 50%. You take 25% of that and put it in legal, contracts, extra management. You can't be greedy," Ricci says.

Synvy Inc., a software and services company in Conshohocken, Pa., that has development centers in Pune, India, and Iasi, Romania, is hoping to minimize employee backlash. It offers U.S. employees who might otherwise be laid off the choice of working at one of those centers at a salary equivalent to what local IT employees earn, which is 30% to 70% less than in the U.S.

In addition to cost savings, the "ex-

change program" offers other benefits, says Chief Technology Officer Chetan Shah. "It helps people gain experience and understand why this global model is so important. They also gain respect for their foreign counterparts.

"You need to be honest with employees," explain the economics of the situation and offer them the right to return when jobs become available in the U.S. again, Shah adds.

But choosing which IT employees should remain after sending work offshore can be tricky, warns Gartner analyst Linda Cohen.

"Not all people are going to make the transition to higher-level positions here as the commodity work is moved offshore," she says, adding that CIOs often choose the wrong people to stay. "Typically, they choose the guys who stuck with them and stayed up all night to fix broken code. They usually pick people who do the very things they're choosing to outsource."

The solution, Cohen says, is to profile all IT employees, flagging as keepers "those with consultative skills who aren't wedded to how work is done but instead are wedded to the outcome."

CIOs should also be forewarned that IT workers aren't the only potential source of employee backlash. Business managers and workers in other departments are often resistant to change, says Kaushik Bhaumik, vice president of business technology consulting at offshore outsourcing vendor Cognizant Technology Solutions Corp. in Teaneck, N.J.

"Each one of those organizations has gotten used to working with IT in a

certain way, and they may be used to Tom or Mary from IT. So you need to identify those users' key concerns, and it may mean keeping Tom or Mary where they are and developing a role around them," he says.

Bhaumik also recommends choosing "change leaders" to remain on board as employees. "Change leaders speak up at meetings and command respect from peers, regardless of their titles," he says. "People listen more and espouse change when they hear it from their peers."

Lay Out Plans

Counseling corporate customers about how to prevent or deal with worker and customer backlash to offshore outsourcing is a growing part of a consultancy's work, Bhaumik says. The most important advice he gives clients is to have what he calls an offshore road map.

"One of the most painful aspects of [offshore outsourcing] is when it comes out in dribs and drabs," he says. "It can be very disconcerting to people. It just stops work." Bhaumik advises clients who are offshoring more than 25 jobs to lay out what they are doing in three, six, nine and 12 months. "People respond better to a long-term road map and their place on it, rather than a road map that appears to be thought up on the fly," he says.

Regardless of the extent of work to be sent offshore, the absolute cornerstone of all backlash-control strategies has to be factual information, experts say.

"You don't want rumor to overtake reality," says Michael Treacy, author of several management books and co-founder of Gen3 Partners Inc., an Internet and offshore outsourcing consulting firm in Boston. "In the end, you can only politicize so long, and then the facts will prevail."

According to Treacy, the "hysteria" that surrounds offshore outsourcing

Preventive Measures

WHEN DEALING WITH EMPLOYEES:

DEVELOP a road map.

AGREE on key messages and centralize communication.

DELIVER facts.

INCLUDE all stakeholders.

REINVEST part of offshore savings in sourcing management.

WHEN DEALING WITH CUSTOMERS:

MINIMIZE movement of customer-facing applications offshore.

GUARANTEE service levels.

STATE benefits in terms of customer value, not internal cost savings.

doesn't reflect reality. He says the highest prediction of the number of jobs lost to offshore outsourcing is 300,000, yet the U.S. economy has 130 million jobs. "That means offshore outsourcing accounts for one quarter of 1% of the American economy," he says.

Customer Concerns

In dealing with customers, Treacy advises CIOs and other executives to always explain their decision to go offshore in terms of the value it brings to the customer. "Customers fundamentally don't care what you're doing with your employees," he says. "That's why every communication to customers must be couched in such a way that you're providing better value to them."

The best way to control damage, of course, is not to outsource offshore. That's the strategy at DSLExtreme, a Canoga Park, Calif.-based cable communications and Internet service provider with 50,000 subscribers. The company tries to offset its higher labor costs by touting itself as a hometown player — "a local company with a local feel," says CEO Ari Ramezani.

The downside, Ramezani says, is the unavoidable fact that consumers have to be willing to pay more for services from companies that don't outsource overseas. **Q 47609**

AVOIDING MISTAKES

Learn 10 communications mistakes companies commonly make when they move IT functions offshore:

QuickLink 47612

Off to India: One Synvy employee relates her experience moving offshore with her job.

QuickLink 47611
www.computerworld.com

Backlash Triggers

85% of buyers and 81% of providers

say they're concerned about legislation and political pressures that would prevent U.S. organizations from moving jobs offshore.

62% of buyers and 72% of providers

say they're concerned about negative corporate publicity about moving jobs offshore.

84% of buyers and 82% of providers

say they're concerned about negative employee backlash.

Base: Survey of 182 buyers and 209 providers of offshore services, spring 2004

Middleware is Everywhere.

Can you see it?

2

4

1

5

3

IBM

Middleware

Key

1. Increased ATM activity detected instantly.
2. Identities confirmed securely.
3. Online banking increases dramatically.
4. IT resources optimized dynamically.
5. Bank serves customers easily.

MIDDLEWARE IS IBM SOFTWARE. Powerful software like Tivoli® and WebSphere®. And it's at the heart of solving what analysts call the key issue of 2004: automation. IBM middleware is open and can deliver it all at a pace to match your needs. It anticipates problems, responds to change and optimizes resources. And it all leads to meeting business goals. That's ON DEMAND BUSINESS.

Learn more about middleware and IBM's leadership role in automation at ibm.com/middleware/automate

IBM, the IBM logo, Tivoli and WebSphere are registered trademarks or trademarks of International Business Machines Corporation in the United States and/or other countries. ©2004 IBM Corporation. All rights reserved.

Managing 'Real' Risks

Tom DeMarco says knowing how to manage project risks enables companies to take bigger ones.

Q&A

To get big payoffs, you need to take big risks, says Cutter Consortium analyst **Tom DeMarco**. In

his most recent book, *Waltzing With Bears*, he and co-author **Timothy Lister** explain how project managers can help their businesses embrace risk and reap the rewards. He told Kathleen Melymuka why risk management is an idea whose time has finally come.

You and Tim Lister have written about many topics over the years. Why risk management now? We have moved from a focus on risk control to a focus on risk-taking. When you're trying to enable people to take risks, then you really need to use a much more disciplined approach that allows you to assess and track the risk. It sounds paradoxical, but it's the change in mind-set from, "Make this go away" to "Make it possible for me to take some really big risks without betting the farm on them." All the systems that are changing the world are very risky systems, but the payback is enormous. So we need much more methodical ways to take risks.

You call risk management "adult project management." Why? Children are allowed to maintain a blasé presumption that there is nothing bad in the world. Adults worry about the bad things that can happen. In pushing aside any consideration of failure, the can-do management philosophy is intrinsically childlike. We need to move past that. Can-do is a recipe for being able to take only small risks.

What are some of the benefits of good risk

management? It makes risk-taking possible. It doesn't oblige you to abandon your stretch goal; it only causes you to consider your fallback plans for if that goal is not reached. It builds a much more healthy relationship between

builder and buyer, in which people are able to talk maturely about uncertainty instead of pretending they're certain when they haven't got a clue. It's a way to scrub out the little white lies that are so much a part of the builder/buyer relationship.

What's the hardest thing about managing risk in an IT project? Risk is an abstraction: something that may or may not happen. We are not used to dealing with abstractions on project plans. Every activity on a project plan has to be done. Any that *might* have to be done are not on the plan. The whole notion of uncertainty is hard to wrap your mind around. It's anti-intuitive and also countercultural in some places. There are some places where you can be wrong but you're not allowed to be uncertain.

Risk management seems so obvious. Why are IT groups so averse to it? There's a presumption built into the heart of IT project planning that starting a project off toward unrealistic goals does no harm. But if you've been through a project that was done that way, you



Tom DeMarco (left) and Timothy Lister address risk-taking in their book *Waltzing With Bears*.

know it does terrible harm. It causes you to do things in the wrong order and leave out things that need to be done. But still, we figure out the most optimistic possible scenario and plan according to that.

Are IT people ready to do real risk management? There is a class of person who is reluctant to open this book. They know it will tell them about managing uncertainty in a reasonable way, and a lot of people don't want to hear that. It's like going for a colonoscopy. You know it's good for you, but you keep putting it off because you don't want to face the possibility of bad news. **47618**

THE ONUS OF UNCERTAINTY

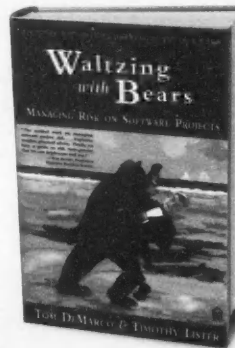
CORPORATE CULTURE – whatever that means – poses serious challenges to the would-be risk manager. The most important of these is an attitude toward uncertainty, summed up as follows: It's OK to be wrong, but not OK to be uncertain. If that rule describes your company, you're sunk.

The rule says you may miss your promised delivery date, but in the months and days leading up to that date, you're not allowed to express any doubt that you will indeed deliver on time. Failure is tolerated as long as you don't commit the capital crime of admitting beforehand that you *might* fail.

This constraint may leave you prone to an infectious disorder called *selective myopia*. Projects that are stricken with this condition can see only small problems. Large problems may loom directly ahead – problems that would be in the center of any healthy project's field of vision – but they go completely unseen.

People take elaborate care not to trip over the railroad ties, but nobody can see the oncoming train. Risks are identified, a risk list is published, risks are reported on status reports, and

mitigation strategies are approved. Risks are monitored and tracked. If one only reviews the risk lists and records, it appears that the project is low-risk. All the risks enumerated are at the inconvenience or nuisance level. The risk-tracking proceeds without variance until the project is suddenly canceled, often followed by a furious bone-picking of the corpse by litigation.



Fortunately, there's a vaccine. At the first go-round of risk identification, vaccinate everyone by naming all the catastrophic outcomes you can imagine. Ask for more catastrophes from the group. Speak the words *failure, rejection and cancellation*. See whether you can get others to speak them publicly as well. Now, work backward from your catastrophe list, asking for scenarios that could lead to each of the catastrophes. Take each scenario and try to describe the risk(s) that could bring it about. Now you have the beginnings of a risk list that might reflect future reality.

The essence of the technique is this: Attack your nightmares, not your petty worries; to discover the risks that really matter to your project, trace backward from effect to cause. Watch for oncoming trains. **D**

Adapted from *Waltzing With Bears*, pp. 42-45, by permission of Dorset House Publishing Co. Copyright 2003 by Tom DeMarco and Timothy Lister. All rights reserved.

Moving Targets

Companies need different types of innovation support from IT, depending on what stage they're in.



New ideas come in many forms, from the disruptive innovation of the first PCs to the business model innovation of Dell's decision to bypass the retail channel and sell directly to consumers. In the July issue of Harvard Business Review, **Geoffrey A. Moore** says the way to get more

bang for your innovation buck is to look at how any market evolves throughout its life cycle and tie your innovation efforts to that evolution. Moore, a managing director of TCG Advisors LLC in San Mateo, Calif., told Computerworld's Kathleen Melymuka that the challenge for IT is to support those evolving efforts with appropriate technology.

Looking at innovation as an evolution is fascinating. What role does IT play in all this? IT is an enabler of each of these kinds of innovation. With disruptive and application innovation, the technologies that matter most are about communication and collaboration. People have been talking about concurrent engineering and collaboration problems for 20 years, but our clients say communication and collaboration are still not what they want them to be. IT has a long way to go to be better at those.

In product and process innovation, things heat up. How does the IT role change? With product and process innovation, where companies are ramping up and seeing hypergrowth, laying down the transactional systems really matters, and designing for scalability is a huge issue. You don't need IT to help you differentiate; you need IT to keep the wheels on the car, and it's vibrating madly. During this period, IT has its hair on fire. It gets very focused and even a bit siloed because at this point the functions in the company that it serves tend to be siloed.

How can IT avoid the silo? During this hypergrowth phase you're growing so fast you may want to talk across functions, but there's no time to talk to anyone. Companies and IT tend to build those silos that they spend the rest of their lives trying to deconstruct, but there's no easy way around it. That's the classic IT of the go-go years.

What happens after that? We're not in hypergrowth but not in decline. We're in that indefinitely elastic middle where IT can be a genuine source of differentiation. You're taking the costs out of processes, and there's a lot IT can do. In particular, you're trying to extract resources out of nondifferentiating processes so you can concentrate on the differentiating ones. Outsourcing some of the functions of the corpora-

tion can be very important here.

How does IT support that? Whenever you outsource, you need great visibility and control systems. IT has fallen behind here. IT systems tend to be about productivity for in-house workers. When we do the work, we're not so worried about visibility and control because management takes care of that. But now [with outsourcing] it's about visibility and control at a distance. It's really important to put in place service-level agreements around outsourced functions that keep everyone apprised. Process control knowledge is typically built into the chemical and oil industries, but average companies don't know squat about it. Sure, we have Six Sigma black belts running all over companies, but IT needs to develop software to take

their place. That's still in the works.

What happens as the market declines? As the curve starts to decline and you come to business model innovation, the old transaction systems will need to be reworked. That's going to disrupt the heck out of IT, and I don't have an easy answer. You may be eliminating members of the value chain. Maybe you no longer need four companies; maybe you can make do with two or one. When you do that, IT systems become ground zero. Look at how Dell disintermediated the retail channels. They did it with IT. So value chain innovation is a big deal.

And at the end of the line? Structural innovation is all about merging companies and merging IT. There must be a place in purgatory where that's all you do, because nobody likes the outcome and everybody hates you for years. That's a place where IT is really challenged. If you have an enemy, this is a great assignment for him. **Q 47712**

This is the latest in a series of monthly discussions with Harvard Business Review authors on topics of interest to IT managers.

Evolution of a Market

To succeed at innovation, Geoffrey A. Moore says, a company needs to calibrate its efforts to the life cycle of the market it's in. Here's how it works:

INNOVATION TYPE	EXAMPLE	MARKET STAGE
Disruptive: Creates new markets as if from nowhere.	Motorola creates first-generation cell phones.	Early: Technology is introduced to early adopters and visionaries.
Application: Takes existing technologies into new markets to serve new purposes.	Tandem applies fault-tolerant computers to banking to create ATMs.	Niche: Technology is gaining acceptance among pragmatists in a niche market where it solves a problem.
Product: Takes established products into established markets to the next level.	Intel releases a new processor.	Adoption: Technology is perceived as necessary and standard for many applications. Revenue soars; competition heats up.
Process: Improves effectiveness or efficiency of processes or products in established markets.	Charles Schwab migrates to online trading.	Early mainstream: Hypergrowth subsides but growth continues. Market share stabilizes. Customers expect and reward systematic improvements.
Experiential: Improves customer experience of established products or processes through surface modifications.	FedEx offers package tracking.	Mature: Growth flattens; commoditization increases. Customers take product for granted, but no threatening technologies are on the horizon.
Marketing: Improves customer-touching processes.	Amazon.com develops e-commerce mechanisms.	Declining: Product category has become ossified and unresponsive to customer needs. Customers seek relief, and threatening new technologies are beginning to appear. The market is ripe for some form of disruption, whether through a new technology that will render this one obsolete or a radically innovative business model.
Business model: Reframes an established value proposition.	IBM shifts to on-demand computing.	
Structural: Capitalizes on disruption to restructure industry relationships.	Fidelity uses deregulation of financial services to offer a broader array of products and services.	

Career Watch

WHAT EMPLOYERS WANT

During an IT job interview, focus on the following:

- How you saved a faltering project or product.
- How you handled a special assignment outside of your official job.
- How you identified and solved problems that had been previously overlooked.
- How you saved the company money.

SOURCE: CAREER GUIDE FOR THE HIGH-TECH PROFESSIONAL: WHERE THE JOBS ARE NOW AND HOW TO LAND THEM (CAREER PRESS INC., 2004)

Sleepless In . . .

- **BRITAIN:** One out of three IT directors is working between **48 and 60 hours a week.**
- **FRANCE:** 39% of IT directors are working more than **60 hours a week.**
- **GERMANY:** 29% of IT directors put in the equivalent of **7.5 working days a week.**

SOURCE: BIBA RESEARCH CONDUCTED JOINTLY BY MERCURY INTERACTIVE CORP. AND THE MANCHESTER BUSINESS SCHOOL

What's on Your Nightstand?

FORMER PRESIDENT BILL CLINTON's new autobiography, *My Life*, is this summer's must-read for executives, according to a June survey of business and IT executives conducted by the Association of Executive Search Consultants in New York. Of 174 executives polled, **36% said they would be reading Clinton's book this summer.**

- Other top titles include *Alexander Hamilton*, by Ron Chernow; *Trump: How To Get Rich*, by Donald Trump with Meredith McIver; *Can You Keep a Secret?*, by Sophie Kinsella; and *Automatic Millionaire*, by David Bach.

Location, Location . . .

Forget who moved your IT job. The latest issue is where it went. According to the U.S. Department of Labor's most recent numbers, the vast majority of IT and other jobs lost to outsourcing stay within the U.S. Of the 239,361 jobs lost in large-scale layoffs during the first quarter of 2004, only 4,633 actually moved overseas, according to the department's Bureau of Labor Statistics.

Meanwhile, a recent survey of 275 finance executives conducted by *CFI* magazine found that companies have moved an average of 6% of their workforces overseas during the past three years. But clearly that number will grow, with 64% of companies that already outsource reporting plans to use more overseas workers in the next two years.

— Julia King

David Perry



TITLE: Founder and president

COMPANY: Perry-Martel International, Ottawa

Q&A

Can you make me money?

Can you save me money? Can you increase my efficiency? These are the only three things today's employers are interested in when it comes to hiring IT professionals. So says author and longtime IT recruiter David Perry in his new book, *Career Guide for the High-Tech Professional: Where the Jobs Are Now And How to Land Them* (Career Press Inc., 2004).

Making yourself relevant to an employer's needs is what will get you noticed and hired, Perry says. IT job candidates need to think about their own accomplishments with their potential employer's requirements in mind. "As a job seeker, you need to become adept at direct self-promotion to executives and to showcase your answer to this question: 'How can I increase shareholder value?'" he writes. Perry recently spoke with *Computerworld's* Julia King about the challenges of finding an IT job today.

What's your advice to IT workers who have been laid off or whose jobs have

been outsourced? How should they be selling themselves in today's IT job market? It's about taking charge of your career and your life. If you've been in the high-tech industry for the past 15 years or so, up until 2001, there was always somebody like me on every corner saying, "Hey, do you want a job?" We have a whole generation of people who don't know how to go and ferret out their own opportunities. You need to start by figuring out what skill sets you have that employers are most likely to pay for, what industries you're interested in and then do a Google search. By doing a Google search by job title, industry, area code, geographic location, etc., you'll get to 80% of the job opportunities out there. Going through IT job boards, you'll maybe get to 2% of the opportunities out there.

And then what? Figure out who the people are with the responsibility for actually hiring you. Find something intelligent to say to these people, and then go after them in a direct manner. Typically, it's a VP. Do a search for quotes from them in business articles or find any white papers they've written and read them. Find the person's e-mail address and send them a note saying you read their white paper and get a discussion going. All of a sudden, you're no longer looking for a job, but you're having a business discussion. For so many people looking for an IT job, that is so far out of the realm of what they've been taught to do.

What are the top three mistakes you see IT job candidates make today?

Sending their résumé to personnel. Sending their résumé to personnel and sending their résumé to personnel. ☎ 47820

Unplug the Jam Cam

The U.S. House Appropriations Committee has voted to withhold \$5 million from the budgets of the departments of Commerce, Justice and State until the federal agencies can prove that all eligible workers are permitted to

telecommute. The 2005 appropriations bill also requires the federal judiciary, the Small Business Administration and the Securities and Exchange Commission to prove that eligible employees are permitted to telecommute.

“With all of the advances in technology today, there's just no reason to strap yourself into a metal box every morning just to drive to an office where you sit in front of a computer all day. Off-the-shelf technology even allows for face-to-face meetings via videoconferencing. So not being able to talk – or see – co-workers on a regular basis is no longer an issue.

REP. FRANK WOLF (R-VA), CHAIRMAN, COMMERCE-JUSTICE-STATE APPROPRIATIONS SUBCOMMITTEE

Got Questions About Network Consolidation?

Computerworld's IT Executive Summit Has the Answers

If you're an IT executive* in an end-user organization, apply to attend Computerworld's upcoming complimentary half-day summit on Network Consolidation.

CIOs and senior IT executives are finding that consolidating high-performance networks can play a key role in improving business application performance while significantly reducing operational costs.

The proliferation of network capacity and related storage and server infrastructure presents a daunting challenge for today's enterprises, many of which are positioning themselves for growth yet still seeking to reduce IT costs where feasible.

By leveraging the knowledge of industry experts and the real-world experience and advice of your IT peers, this IT Executive Summit will provide an overview of effective strategies for consolidating and connecting networks and data center applications.

* Complimentary registration is restricted to qualified IT executives only.

Apply for registration today

For more information or to apply, visit www.itexecutivesummit.com/nc

Streamlining Networks and Data Centers: The Business Benefits of Consolidation

San Francisco • August 5, 2004

San Francisco Four Seasons Hotel • 757 Market Street

7:45am to 8:15am Registration and Networking Breakfast

8:15am to 8:45am

Rebuilding the IT Foundation

Maryfran Johnson, Editor in Chief, Computerworld

8:45am to 9:15am

Consolidation and the Data Center: Boosting Business Performance and Application Availability

Matt Eastwood, Research Director, Global Enterprise Server Solutions, IDC

9:15am to 9:45am

Perspectives from a CIO

9:45am to 10:15am

Refreshment and Networking Break

10:15am to 10:45am

User Case Study

Alejandro Lopez, System Architect, University of California Davis Medical Center

10:45am to 11:15am

Customer Challenges and Solutions: Real-Life Scenarios Connecting Data Centers Over Distance

Steve Adolph, CTO, Enterprise Solutions Group, CIENA

11:15am to noon

Panel: Overcoming Management Barriers — Making the Case for Consolidation

Panel Moderator: Maryfran Johnson, Editor in Chief, Computerworld

Panelists: Joe Puglisi, CIO, EMCOR; Stephen Morin, CIO, TAC Worldwide; Frank Enlanto, Vice President, Operations Delivery & Information Security, Blue Cross Blue Shield of Massachusetts; Alejandro Lopez, System Architect, University of California Davis Medical Center

Noon

Program Concludes

Selected speakers include:



Maryfran Johnson
Editor in Chief,
Computerworld



Matt Eastwood
Research Director,
Global Enterprise
Server Solutions,
IDC



Steve Adolph
CTO, Enterprise
Solutions Group
CIENA



Joe Puglisi
CIO,
EMCOR

This program will also take place in: Chicago • August 25, 2004

Dallas • September 22, 2004

For more information on these locations, call 888-299-0155

Exclusively sponsored by:



COMPUTERWORLD
IT EXECUTIVE SUMMIT
NETWORK CONSOLIDATION



BRIEFS

Capgemini Targets Energy Sector

Capgemini Energy LP, a collaborative venture of Capgemini America Inc. and TXU Corp. and its subsidiaries, began operations in Dallas as part of a 10-year deal to provide IT, call center and business services initially to TXU and, later, to other energy companies. Bob Pryor, who previously served for four years as North American president of outsourcing services at Capgemini, will serve as CEO. Elizabeth Lavalley, who most recently served as Dallas-based TXU's senior vice president of IT, will join the limited partnership as chief operating officer.

CSC, Cinergy Sign IT Services Deal

Computer Sciences Corp. announced that it has signed a five-year, \$71 million IT application services agreement with Cinergy Services Inc., the administrative arm of Cinergy Corp., a Cincinnati-based power provider. El Segundo, Calif.-based CSC will provide application development and support for noncore functions. Cinergy will retain application work related to mission-critical company programs. CSC has conducted project work for Cinergy for 15 years in areas such as application development, systems integration and supply chain management.

CIO, CTO Quit Citrix

Fort Lauderdale, Fla.-based Citrix Systems Inc. announced that Jeanne M. Moreno, senior vice president of corporate services and CIO, and Bob Kruger, senior vice president of product development and chief technology officer, have decided to leave the company. Citrix also announced that it will reorganize the corporate services unit, including IT, facilities, purchasing and manufacturing. The unit will be integrated into the finance and administration organization under Chief Financial Officer David Henshall.

BART PERKINS

Regenerating IT

MANY COMPANIES feel that their IT organizations are "broken" or irreparably damaged, and indeed, some are. The symptoms of a damaged IT organization are all too familiar: failed projects, big write-offs, high CIO turnover, an outdated technology base and uninformed executives telling the latest CIO, "Call me when the problems are fixed." These companies are often tempted to succumb to the siren song of the outsourcers who offer to take over all of IT and promise to fix it.

However, companies that expect to leverage an outsourcer's expertise in this manner usually find that their costs increase dramatically. In addition, the outsourcer often requires numerous changes to corporate business processes, some of which may be unacceptable.

When an IT organization is badly damaged, outsourcing the whole thing is truly tempting, but such a desire often means "Let's abdicate all responsibility for IT." Such endeavors can be classified as "desperation outsourcing" and rarely succeed. Outsourcing IT can be successful, but not when the organization is damaged. Fix the problems first, then revisit outsourcing options.

Like the damaged arm of a starfish, the failed IT organization needs to be regenerated, not amputated. Successful regeneration efforts require a strong CIO who will say "no" loudly and clearly when needed, even if it makes powerful executives unhappy.

Regeneration efforts aren't a popularity contest. The leadership role is generally best performed by an OOTA (out of town agitator), a specialist from outside the corporation. The OOTA is hired as CIO to focus solely



BART PERKINS is managing partner at Leverage Partners Inc. in Louisville, Ky., which helps CIOs manage their IT suppliers. He was CIO at Tricon Global Restaurants Inc. and Dole Food Co. Contact him at BartPerkins@LeveragePartners.com.

on successful regeneration, which usually takes two to three years. When the regeneration is complete, IT will be turned over to a new CIO whose skills are better suited to running a stable organization. Make sure to wait until completion to make this turnover; the two CIOs aren't interchangeable, since they have widely different skill sets. Switching too soon can undo everything that's been accomplished to date without reaping the full benefits of the regeneration effort.

Yes, the right OOTA can be expensive, but not as

expensive as outsourcing your whole IT organization, and certainly not as expensive as outsourcing IT, failing and then having to bring it back in-house.

A firm foundation for successful regeneration also includes the following requirements:

■ **Executive buy-in.** IT isn't a spectator sport. The other CxOs need to actively support the regeneration effort. Most new IT systems require changes to the underlying business processes, particularly when replacing outdated systems. Midlevel managers who prefer the status quo must not be allowed to withhold their cooperation or ignore or undermine the efforts of the re-

generation team.

■ **Sufficient time.** Problems that took many years to develop require substantial time to correct — usually measured in years, not months. Unfortunately, there are no silver bullets.

■ **The right team.** Regeneration isn't sexy, but don't be tempted to put a second-level team on it. Regeneration requires a talented, focused and dedicated team, and prior regeneration experience is invaluable. While the team may find it helpful to supplement existing staff with experienced consultants, the internal members must be held responsible for the final results.

■ **Stability.** Make any needed staffing changes at the start. Changing leadership or key employees midstream will almost certainly derail the effort.

■ **Focus and execution.** Start regeneration with a clear, well-thought-out plan. Then focus ruthlessly on delivering against that plan. When an IT organization hasn't delivered for several years, there is inevitably pent-up demand for IT services. When the rest of the corporation realizes that the IT organization may be productive again, demand will be enormous. But the CIO must delay most new projects until regeneration nears completion. Undertaking unanticipated projects can severely hamper regeneration success.

Although it's tempting to believe that outsourcing a broken IT organization will magically fix it, this "out of sight, out of mind" approach usually spells disaster. When your IT organization is damaged, don't succumb to desperation outsourcing. Instead, take your cue from the starfish at the bottom of the ocean to make sure your IT organization doesn't end up at the bottom of the Dumpster. ☛ 47773

MORE ONLINE

IT Turnarounds: Is your IT shop chaotic, unfocused or demoralized? Here's a road map for fixing such problems: **QuickLink 41369**

Want our opinion?

For more columns and links to our archives, go to **www.computerworld.com**

Advertising Supplement

IT Careers: Leaders of Top Education Programs Look to Future

The leaders of the nation's top computer science/software engineering degree programs agree on two things about preparing the IT workforce of the future. First, they need to attract more people to the technical professions. Second, the breadth and dexterity of what is covered in lifelong learning continues to grow.

U.S. News & World Report rated Rose-Hulman Institute of Technology, Cal-Poly (San Luis Obispo) and The Cooper Union as the top three institutions for undergraduate computer engineering.

Dr. George Campbell, president of The Cooper Union for Advancement of Science and Art in New York City, looks at the issue of technology education from two perspectives – in his current role as an academic leader and his previous role as CEO of NACME, a non-profit devoted to science and technology education and policy. "The most significant deficiency we have been unable to overcome is under-representation of women and minorities" in technical studies, Campbell says. "In the past we have filled the workforce needs by bringing technology workers into this country. This is no longer working. Other countries are investing a greater proportion of their gross national product in the education of their own technical workforce."

Cooper Union's situation is highly unique; the institution has 1,000 students, 100% of whom are on full tuition scholarships. Approximately 32% of the students are female. The number is higher than the nationwide average of women in technology (23%). However, the number of African-Americans, Latinos and American Indians enrolled in technology courses nationwide remains in low double-digit figures. Campbell believes change will occur only through intervention at earlier ages to attract children from inner city schools.

While demographics and numbers are critical, given that the vast majority of higher paying jobs is in the technology areas, so too is the breadth of studies undertaken. According to Campbell, "Most of the technology advances that took place in the 20th century resulted from major breakthroughs in physical sciences – quantum mechanics, solid state physics, chemistry and so on," Campbell explains. "In the future, more advances in



technology will be driven by breakthroughs and greater understanding of processes in life sciences—self replication, DNA and the like. I believe all engineering majors should have a course in molecular cell biology, just as physics and chemistry are required today."

In addition to major shifts in curriculum to include life sciences, Campbell says educational programs have to avoid the trap of relying on simulations alone to help teach. "You really need to understand the ideas to comprehend the technology that is behind it," he says.

Dr. Cary Laxer, head of the software engineering/computer science program at Rose-Hulman Institute of Technology, says the breadth of capabilities required also must be addressed. Rose-Hulman already has added courses in critical areas – networking, computer security and cryptography. "We've added a required course in technical communications," Laxer adds, "to make sure our graduates can

communicate with a variety of constituencies." Laxer and his peers at other U.S. universities continue to assess the longer term future of technology and adjust curricula accordingly. Adding courses is just one aspect of that change – professional development for faculty and equipment for students also has to be included.

The third critical aspect of IT education is lifelong learning, say Campbell and Laxer. "This isn't just a technical issue," stresses Campbell. "There needs to be a balance between liberal arts and technology learning throughout life. This is so important in understanding the context in which we do science and engineering – the ethics, societal implications and economic effects. These are the things that separate professionals and visionary leaders" from others, Campbell adds.

For more information about IT Careers advertising, please contact:

Nancy Percival, Vice President, Recruitment Advertising
800.762.2977

500 Old Connecticut Path, Framingham, MA 01701

Produced by Carole R. Hedden

DATABASE ADMINISTRATOR: sought by IT co. in Houston, TX. Must have degree & exp. Respond by resume only: E. Pascual, President T/B#10, Computer + Peripherals, Inc., 11750 Wilcrest Dr., Houston, TX 77099

IT PROFESSIONALS

Senior Consultant

(Glen Mills, PA and other locations throughout the United States). Lead a team of Siebel customization developers in a Siebel Application development environment, specifically with Siebel Activate reporting. Responsible for the creation of project plans, initial effort estimation, finalizing scope of the engagement, resource allocation and prioritization of tasks of team members. Responsible for liaising with business users to discuss implementation options for reporting and presenting and review the design and prototypes of the proposed reporting solutions. Responsible for the scoping and mapping of operational reporting requirements to Activate Siebel reports with report parameters/filters. Design and develop the latest versions of Activate Siebel reports, and set up scheduling options, and user groups for security control utilizing the Activate Report Server. Customize Siebel enterprise applications such as Siebel Sales, Siebel Call Center and Siebel service utilizing Siebel tools such as Siebel VB/Script, Utilize Oracle SQL capabilities for testing methods of data transfer and storage in the Siebel Database and for loading data via Siebel EIM for performance testing activities.

The wage offered is \$82,000/year. The work schedule is Monday-Friday 9:00am-5:00pm. The minimum requirements are as follows: Bachelor's degree or equivalent in Computer Science, Engineering (any), Business Administration, Information Systems or Mathematics plus 6 years experience in the job offered or 6 years experience as a Manager, Senior Consultant, Consultant, Associate Consultant, or Senior Analyst. Employer will regard a foreign degree to be equivalent to a U.S. Bachelor's degree as determined by an accredited credentials evaluation service. Related experience must also include at least 2 years of Siebel Activate Reporting, Siebel Application Development Environment (Siebel Tools) and Oracle/SQL.

Please send your resume, referencing Job Order Number **WEB 433177** to the: FA CareerLink, FLC Unit, 235 W. Chelton Avenue, Philadelphia, PA 19144. EOE.

BCC USA Inc. - Portland, Maine needs experienced Programmer Analysts having a Bachelors degree with minimum two years of progressive work experience in Java, J2EE, EJB, JSP, Servlets, JavaScript, XML, XSL, MVC, Struts, Weblogic and Oracle. Competitive salary and benefits. M-F, 40 hours/week. Please mail your resume to BCC USA Inc., HR Department, 650 Main Street, Suite 201, South Portland, ME 04106.

BCC USA Inc. - Portland, Maine needs experienced Database Administrators having a Bachelors degree with minimum two years of progressive work experience in design, development and installation of databases using Oracle, Sybase Developer, Pro*C, Perl DBI, Unix, PL/SQL, Informatica, Autosys and Erwin. Competitive salary and benefits. M-F, 40 hours/week. Please mail your resume to BCC USA Inc., HR Department, 650 Main Street, Suite 201, South Portland, ME 04106.



itcareers.com can solve the labyrinth of job hunting by matching the right IT skills with the right IT position.

Find out more at:

www.itcareers.com

YOUR RIDE TO SUCCESS

JOIN THE \$300 BILLION COMPUTER SERVICE BUSINESS.

Find out how you can invest in one of Entrepreneur Magazine's "HOT 100 Franchises", and in a Franchise Times "FAST 55" company. Single, Multi-Units and Area Development Opportunities are now available.

For more information call **888-667-4577** (ext. 307) or visit us at: geeksoncall.com

FRANCHISES AVAILABLE

©Geeks On Call America, Inc.

e-lite companies
e-merging companies
e-ssential companies
e-normous opportunities
www.itcareers.com

Compuware

At Compuware, you can put your IT experience to work while continuing to develop new skills. We currently have the following nationwide opportunities:

- Business Analysts
- Database Administrators
- Network Administrators
- Product Sales
- Product Management/Support
- Programmers/Analysts
- Project Managers
- QA Analysts
- Software Developers/Engineers
- System Engineers
- Technical Writers
- Web Developers
- Recruiting Manager

www.compuware.com/careers

We sure to indicate the specific title and location you are applying for on my application letter. Send your resume, referring to #ITC071204, to: Compuware Corporation, One Campus Martius Detroit, MI 48226. E-mail: ads@compuware.com EOE

Applied Optoelectronics, Inc.

(Sugar Land, TX) is seeking a Database Administrator using Oracle9i, SQL DTS, TransactSQL, Pervasive 7, VB, PL/SQL, VMS, Linux, UNIX scripting, Tivoli, EMC environment, Erwin, and UML. Peoplesoft, SAP with Oracle, DB2 and Sybase. B.S. in Computer Science. Send resume to 13111 Jess Pittle Blvd., Waco, TX 77747-281-295-1888 (F). Attn: HR Manager.

K.T.J. Imports and Exports, Inc.

(Houston, TX) is seeking a MIS Engineer/MIS Specialist using knowledge in business, OS/AS, and SAP Data Warehouse software. B.S. in mon. exp. Send resume to 6500 Long Point Rd. #304, Houston, TX 77057/713-680-3124(F). Attn: Chyryl Shiao, Canspec Amerasia Industries, Inc. (Houston, TX) is seeking Systems Programmer B.S. 1 yr. exp. using Microsoft .Net, ASP, VB .Net, Java, SQL, OLAP, XML, GeoFrame, HR, Jason, Ergos99, iis, Sun Blade2000, Sun Ultra60, and SGI OCTANE. Send resume to 8303 S.W. Hwy. #482, Houston, TX 77074/713-771-8888(F). Attn: Eric.

Programmer Analysts to analyze,

design, develop and support computer systems using OS like MVS/ESA, DOS/VS, UNIX, MS-WINDOWS, databases such as DB2, VSAM and Oracle, programming environments such as C, C++, COBOL, COBOL II, TSO/ISPF, CICS, JCL and tools including FILEAID, IDCAMS, SQL*PLUS and PRO*C, generate batch reports from existing data and debug for better performance. Require BS or foreign equivalent in CS or any branch of Engineering or related field with 2 yrs exp. in IT. High salary, fit position. Travel involved. Resumes to HR, Smartsoft International, Inc., 3965 Johns Creek Court, Suwanee, GA 30024.

IT SPECIALIST to plan, design,

implement, maintain and administer the company's information infrastructure, including hardware setup and maintenance, software installation, configuration and upgrades; network administration and troubleshooting; implement, evaluate and maintain networked computer hardware to meet user requirements; design, develop and maintain the company's web; provide programming, design and technical support for users and clients. Require Bachelor's degree in Computer Science/Information Systems. Competitive salary offered. Mail resumes to: Chief Manager, Lajli Investments, LLC, 1351 Dogwood Dr., Cary, NC 27513.

Partner Manager, Latin America,

Identify & initiate business relationships with Latin American third party vendors of software & database systems. Manage relationships with Latin American vendors. Supervise Latin American sales channels & marketing activities. Requires Bachelor's or equiv. in Marketing or Business Admin. plus 4 years exp. in position offered or 4 years exp. as Marketing (Manager/Director). Computer Software Engineer. Frequent travel in Latin America, 4 years experience with Software sales & marketing in Latin American markets. Fluency (spoken & written) in Portuguese & Spanish languages. Salary \$90,000 per year. Hours: 8:00 a.m. - 5:00 p.m., 40 hours, Monday-Friday. Job located in Miami, FL. Send resume to: Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869. Ref: JOFLF 2533090.

Sys Analyst to dftn, dev, impl,

maintain web enabled eComm client-server & N-tier apps. Perform sys req study, sys analysis, Test Plan Program, Unit Testing, Sys Integrn Testing & Doc. Dev. apply using Java, Servlet, JSP, J2EE, JMS, HTML, JSP, Script, JavaScript, ASP, VB6.0, COM/DCOM, VC++, IS4.0, Weblogic 5.1/6.0, SQLServer 6.0, Visual Cafe 3.0, Visual InterDev 6.0, VSS 8.0, Solaris 7, WebSphere App Server 4.x/5.x, MCSeries DB2 7.3/8.1, AIX 3.4, Win 2000, SOAP 1.1, ANT, JUnit, WebSphere Studio App Developer 4.x/5.x, JProbe, P/VS, Versata Logic 5.5 & 5.6 & reason for lifecycle of sys proj. 24x7 tech supp. BS in CE + 2 yr exp. Cert Java programmer. Comp. salary. Apply to Uniline - Code RE, 4625 Alexander Dr. #110, Alpharetta, GA 30022 with proof of perm. Wk author.

Infobahn Technologies delivers

innovative IT Solutions to business clients nationwide. We have immediate full time opportunities for Programmer Analysts. All applicants must have a minimum BS in Computer Science Engineering or Related field plus 2 years of experience. Send resumes to: Infobahn Technologies, (HR) 288 Walnut St. #410 Newton, MA 02460.

Manager, IT, (Rockleigh,

NJ). Reqs 4 yrs exp IT management, incl secure databases & MBA or MPA w/undergrad Comp Sci, Math, or Elec Engineering major. Will also accept 4 yrs exp & MBA w/IT core. Send resume: W/Tender, 8 King Rd, Rockleigh, NJ 07647 Attn: HR/IT.

MPHASIS CORPORATION

Has multiple openings for the following positions at its offices in New York, NY, Memphis, TN, Houston, TX, San Mateo, CA and unanticipated client sites throughout the U.S.: Programmer Analyst, Software Engineer, Project Manager, Management Analyst, Sales Engineer, Business Development Manager, Finance Manager. Please send resume, salary history and position applied for to: 460 Park Avenue South, Suite #1101, New York, NY 10016, Attn: H.R. Manager

Technical Support Specialist,

assign and coordinate work projects; establish work priorities and evaluate cost and time requirements; review and test programs to ensure compliance with specifications and standards; evaluate and test vendor-supplied software packages to determine compatibility with existing systems; maintain company network system and website, process e-commerce. Req. BS or foreign equivalent in CS or IS w/proficiency in SQL, Intel Xeon & Itanium Server support, TCP/IP, network HW/SW installation, configuration, and troubleshooting. 40hr/wk. 9-5. Contact recruiter PC Source, Inc., 3004 Adriatic Court, Norcross, GA 30071.

Acute IT Technical Lead, We-

hovia Services, Chicago, IL. Develop, create and modify computer appl. software using Acute software. Reqs. BA in Computer Science and 4 yrs exp. in pos. or as Software Engineer. The 4 yrs. must incl. developing software and web appl. solutions using Acute software and work integrating Acute into .Net apps, externalizing security (w/o use of LDAP), developing apps. incl. transient reports; designing object oriented appl. in the Acute framework, report comp., publ. tech. doc. and conducting stress tests and developing queries against Oracle and/or MS2. 2 yrs. of req. exp. must incl. developing apps. using Microsoft .Net framework. Must be Acute certified M-F, 8-5. Send resume to: Get Ann Henderson, Wehovia Corp., 401 S Tryon Street, NC 9586, Charlotte, NC 28268-0958. No phone calls.

Requirements Analyst needed

at client sites to gather business reqmts, analyze & dev. scenarios; Prgm in Siebel, Java, JSP, C++, SOLI/PLSQL; test using WinRunner, LoadRunner, Test Director; UML modeling using CaliberRM; data modeling using SAS, SPSS; OO data modeling & db dsgn. Resume to: Global Consultants, Attn: Hiram, 25 Airport Rd., Morristown, NJ 07960.

Communications Engineer

Homestead, FL - wanted by telecommunication & entertainment provider. Monitor & troubleshoot the uplinking, downlinking & transmissions of digital voice, image & data files. Monitor & troubleshoot the interconnectivity of satellite to fiber optic/fiber optic to satellite hardware. Troubleshoot reception & amplification issues during transmissions. B.S Electronics & Communications Eng or foreign equivalence & 2 yr exp. in job offered. Fax resume to: Saltpire, Inc. attn: Human Resources all 305-247-8011.

North East Fasteners, Inc. is

looking for systems developers to define and design page architecture and navigation models; develop data models and databases; and administer databases. Must have at least bachelors degree in computer engineering or related major. Please send all resumes to North East Fasteners, Inc. 8 Tremco Dr., Terryville, CT 06786, attn: Human Resource Department.

Computer Support Specialist

to support computing infrastructure including servers, email, apps, network, db & users. Requires MS in Comp Sci & min 2 yrs exp w/Novell, Solaris, Linux & MS Windows systems, LAN/WAN networking, web server & SQL server; familiarity w/Visual Basic, Oracle, .Net, XML & ASP required. Send resume to Human Resources, Sunrise Global Inc., 4000 Bordentown Ave., Sayreville, NJ 08872, or fax to 732-651-9998.

Software QA Eng IV, Team

Leader - Est. overall test automation direction for one or more product lines, automate functional & scalability test scenarios. Review project reqs, tech. documentation, define project test strategy. Review & define test cases/docs. Track defects & approve project release. Train/supervise junior team members. REQ: BA/BS CS/IT/Eng. 8 yrs as QA/SE. 5 yrs test automation exp. 3 yrs DB testing exp. 5 yrs automated performance & scalability testing w/ comm'l perf test tool, project mgmt exp. 2 pos avail. Resume: m013_04@oneource.com. OneSource is an Equal Opportunity Employer.

Software Engineer

Seeking individual with experience working with application servers (ATG Dynamo 4.1/5.1), operating systems (Windows NT, Sun Solaris, UNIX, Netware), programming languages (Visual Basic, JAVA, ASP, COBOL, C), software configuration tools (Rational ClearCase 3.2.1), and effective communication skills. Must have BS, 5 years experience as software engineer. Sun Certified Java Programmer, and significant experience programming. Salary \$55,000. Send resume and cover letter outlining minimum qualifications to Provion, 1501 Commerce Ave., Carlisle, PA 17013.

Computers - Development Managers

needed. Seeking qual. candidates possessing MS or equiv. and/or rel. work exp. Part of the req. rel. work exp. include 3 yrs. working with Java. Duties include: Design, develop & implement software systems & applications; Monitor & coordinate software systems using development & integration. Fwd. resume & ref. to: Globecom Software, Attn: HR, 1702 N. Fairmount St. #101, Wichita, KS 67208.

Cognit has openings for System

Analysts or Software Engineers. Candidates must have BS/MS with experience. Use skills such as Java, Cobol, EJB, ERP, Oracle, SQL, VB, C/C++, Travel may be required for some jobs. Competitive salary. Please apply at info@cognit.com. No calls EOE.

IT specialists wanted by AR-

WANO, Inc. for positions using Oracle, SQL, VB, C/C++, SAP AS/400, RPGLE, COBOL/400, CL, SQL/400, Query/400, Oracle RDBMS, Developer 2000, Windows NT. Minimum is BS degree with IT exp. Travel maybe required. Please apply at wasem@arwano.com EOE.

Applications Engineer

required by Hayward, CA, based chain of shoe retailers. Requires Bachelor's degree in any engineering field. Must be knowledgeable in code development, Java 1.2 and 2.0, and Java with Oracle databases for web based projects. Send resume to Rosa Rahemi, VP of Finance, Sheikh Shoes, 2247 Commerce Place, Hayward, CA 94545.

The screenshot shows the ITcareers.com homepage. At the top, there's a navigation bar with 'careers.com' and 'Career Journal.com'. Below that, a large banner reads 'find a job • features & tips • post a job • advertiser tools'. A 'Welcome to IT Careers' section follows, with links to 'find a job', 'features & tips', 'post a job', and 'advertiser tools'. The 'find a job' section highlights a 'COMPUTERWORLD SALARY SURVEY' and a '100 BEST PLACES' list. The 'post a job' section describes the benefits of posting on the site, including access to a large database of job seekers. The 'advertiser tools' section lists various services for employers, such as targeted advertising and recruitment solutions.

This is a large advertisement for the website www.itcareers.com. The top part features the website's URL in a large, bold font. Below it, a tagline reads: 'is the place where your fellow readers are getting a jump on even more of the world's best jobs.' The bottom section of the ad promotes the website's integration with CareerJournal.com, stating: 'Now combined with CareerJournal.com, you have more jobs to choose from.' The URL 'www.itcareers.com' is repeated at the very bottom in a large, bold font.



itcareers.com

can solve the

labyrinth of

job hunting by

matching the

right IT skills

with the right

IT position.

Find out more

at:

www.itcareers.com

Systems Analyst

Develops and implements systems for variety of industries. Must have Bach. in comp. sci. or eng. plus two yrs. exp. in senior Supply chain planning, logistics & business process transformation w/ Manuplistics Advanced Planning & Scheduling, SAP R/3, Oracle& rel. lang. & tools. Perf. SQL Loader & Web Intel. Frequent travel & relocation. \$67,000/yr., F/T, hrs. vary. Send resumes to Pgh/Allegh. City, Careerlink Attn: CL Program-Super, 425 Etn Ave., Ste. 2200, Pgh, PA 15219-1837. Ref. Job Order # WEB433084.

Systems Analyst

Systems Analyst needed at client sites to design, develop, implement Web based applications using current technology incl Oracle Financials 11i (PO, AP, GL, AR, FA, INV, HR, Application Object Libraries & System Administration), Oracle 9i/AS, Oracle Web Application Server, PL/SQL Cartridges, Oracle Forms 6i/Reports 6i, Dvpr 2000, Dmgr 2000, SQL/PLSQL Prgrms, Unix Shell Prgrms, Pro/C, SQL Loader, SANLINE, HTML & Javascript. Resume to: Dolphin Solutions, 9567 Westover Club Cir, Windmere, PA 34786.

SOFTWARE ENGINEER

PCTEL Inc. a global leader in simplifying mobility seeks an experienced Software Engineer to research and analyze highly sophisticated applications for developing and testing. The candidate will be responsible for all phases of software development including architecture, design, development, testing and debugging state-of-the-art software applications. As a member of a development team you will develop a multi-protocol interface for IP networks, using C/C++, JAVA, Linux (Unix), SQL, SNMP, TCP/IP and wireless LAN's protocol. Duties involve debugging existing software and the creation of new software applications. Will be responsible for formulating a plan outlining the steps to develop programs using structural analysis and design techniques, and preparing flow-charts and diagrams to illustrate the sequence steps a program must follow and describe the operation involved. Requires Bachelor of Science in Computer Science or its equivalent plus a minimum of two years direct experience in this job offered. Position also requires travel to Eastern Europe approx. 20% of the year. Candidate must be legally eligible to work in the United States for any employer. Send your resume directly to: jobs@pcstel.com Please include Job code 407 Software Engineer in the subject line. Or mail directly to: HR Dept., PCTEL, Inc. 8725 W. Higgins Rd. Suite 400, Chicago, IL 60631 PCTEL, Inc. is an equal opportunity employer.

IT PROFESSIONALS

Manager

(Glen Mills, Pennsylvania and other locations through the U.S.) Will oversee consulting engagements for major corporate clients. Will assist client management to assess strategic planning and business operational requirements in order to determine engagement, staff, and budget. Will review engagement plans with assigned professional staff and oversee analysis of client global supply chain and operations including supply chain strategy, new product development process for Collaborative Product Commerce (CPC) such as PTC Windchill, & Agile Software Development; logistics operations for Transportation/Warehouse Management Systems (TMS/WMS) implementation and operations excellence for Enterprise Resource Planning (ERP) such as Oracle, SAP and MFG/PRO implementation. Will review analyses by professional Consultants and Business Analysts regarding industry and client specific data to formulate recommendations on operational issues. Will supervise the implementation of operational and system modifications by client corporations. The wage offered is \$100,895 per year. The work schedule is Monday-Friday, 9:00 am to 5:00 pm. The minimum requirements are as follows: Bachelor's degree or equivalent in Computer Science, Math, Engineering (any), Information Systems or Business Administration + 5 years of experience in the job offered or 5 years of experience as a Consultant, Technology Manager, Senior Engineer, Principal Product Designer. Related experience must include at least six months of Transportation/Warehouse Management Systems (TMS/WMS) and Enterprise Resource Planning (ERP) and Collaborative Product Commerce (CPC).

Please send your resume, referencing Job Order Number **WEB433946** to: PA Careerlink, FLC Unit, 235 W. Chetters Avenue, Philadelphia, PA 19144, EOE.

IT PROFESSIONALS

Consultant

(Glen Mills, Pennsylvania and other locations through the U.S.) Analyze client business requirements and perform business and technical comparisons to decide implementation approaches. Frame functional design and conceptual designs for implementation. Conduct client meetings to bring about resolution on issues and clarify in communication. Implement Siebel as the Customer Relationship Management (CRM) package, and integrate Siebel with multiple client boundary systems through Siebel Enterprise Application Integration (EAI) Layer. Develop interfaces with client middleware (Information Highway), and test transactions end-to-end with the boundary systems to successfully deploy and support the implementation. Perform Web Development. Perform software testing using industry-standard software tools such as Mercury Interactive Testing Suite. Perform database tuning of client systems including Oracle &.

WAGE: \$54,000/year
Hours worked: Monday-Friday 9:00am-5:00pm

MINIMUM REQUIREMENTS:

Bachelor's degree or equivalent in Computer Science, Engineering (any type), Math, Business Administration or Information Systems + one and a half years exp. in the job offered or one and a half years exp. as a Systems Analyst, Consultant, or Programmer. Related experience must include at least one year of Web Development, Customer Relationship Management/Siebel (CRM), Enterprise Application Integration (EAI), Oracle Databases (including Oracle 8i), and Mercury Interactive Testing Suite. Employer will regard a foreign degree to be equivalent to a U.S. Bachelor's degree as determined by an accredited credentials evaluation service.

Please send your resume, referencing Job Order Number **WEB421754** to: PA Careerlink, FLC Unit, 235 W. Chetters Ave., Philadelphia, PA 19144, EOE.

Sr. QA/Testing Analyst needed in Wichita to perform & lead team for complex testing on complex projects using Softbrands Software Products Portfolio, Internet based products, RIO, Leisure Mgmt, Landmark, IGS Worldwide, Madison & Mercury WinRunner in Hospitality domain, assist in installation problems, plan & implement automated testing; research & develop mktg reqmts. Resume to: Softbrands Hospitality, Two Meridian Crossings #800, Minneapolis, MN 55423.

Sr Programmer Analyst. Program & design software components using Visual C++, Visual Basic, Visual SourceSafe, DB2, SQL, IIS, ADO, ODBC, ASP, SNA Server, ATL, Visual Studio C++, COM+, MFC, T-Net, Laureate, DCOM, and MTS. Bachelor, or equiv. in CS, Eng'g, Business, or equiv. req'd, as is 2 yrs of exp in job offered or a systems analysis position. Mail resumes to: J. Cuniffe, Job #1915.23, Sallie Mae, Inc., 11100 USA Parkway, Fishers, IN 46238.

Systems Administrator (with Bachelors degree and 5 years experience) - Columbus, OH. Job entails and requires experience in configuration and maintenance of systems using Veritas Backup, Windows Active Directory, Sun Solaris and Citrix Metaframe and Exchange Server. Develop Systems using P3, Expedition and Kana. Relocation within USA Possible. Attractive compensation package. Send resume to Priya Venkat, Technology Software Inc., 1515 Bethel Rd., Suite 304, Columbus, OH 43220.

SYSTEMS ANALYST/PROGRAMMER - (LA) to design, plan & implement complex app's in ERP systems, incl'g SAP; modify, code & test new enhanced systems & programs utilizing ABAP/4, SAP Script & Java programming languages, using Oracle db dialog programming, SAP objects, config of SAP modules, etc., & evaluate business requests for new/reengineering app's for current & future business needs. 3 hrs/wk. Must have bch'd's in comp sci, MIS, Elec Engrg or Mech Engrg & 2 yrs exp in job. Contact AIG SunAmerica, Attn: Pro. Staffing Mgr., 1999 Ave. of the Stars, Century City, CA 90067 & quote #12586

Computer/Info Systems

Information Systems Professionals

To participate in analysis, problem solving, project design and technical implementation for major products. Participate in the timely and high quality delivery of product, implementation, integration, design, coding, testing and documentation of custom application software; evaluate user requirements and consult with design team to identify current procedures and needs; support and train end-users. Technologies/Platforms used include UNIX, Windows NT, SQL Server, or Oracle using SQL, C/C++, Visual Basic, Java, Cobol and other appropriate programming languages in Client/Server, Network and Mainframe environments. Must have a Bachelors degree, or its equivalent. We are hiring at all experience levels. Please send resume to Human Resources, Knightsbridge Solutions, 500 W. Madison Ave., Suite 3100, Chicago, IL 60661 or recruiting@knightsbridge.com. EOE.

Computer Professional (Multiple Openings) - Wrexham in one or more of the following skills: C/C++, JAVA, Power Builder, Visual Basic, Oracle, Developer 2000, Sybase, Windows, Unix Admin, People Soft, SQL Server, SAP, Oracle Applications, Cobol, DB2, AS/400, ASP, etc.
Lucrative compensation. Please E-mail your Resumes to the following address: RESUME@COMDATAUS.COM
Attn: HR Department
Comdata Consulting, Inc.
2775 Algonquin Rd
Suite # 240
Rolling Meadows, IL 60008
VISIT WWW.COMDATAUS.COM
For More Details

Sr. Quality Eng. wanted by company engaged in graphics and multimedia technology design, manufacturing and marketing. Requires Bach. in CS or EE plus 5 yrs exp. including audio/video software. Reply to ATI Research, Inc. H.R. Dept., Attn: K.B., 62 Forest Street, Marlborough, MA 01752.

Technical Marketing Managers

for company's IT products & services. Responsible for technical sales & marketing of custom IT solutions to clients in the banking & financial services industries. Determine customer IT requirements and develop tailored sales & marketing presentations. Bachelor's degree in computer science, engineering or a related field plus 3 years experience in marketing of IT software products & services. Up to 1 year experience may be satisfied with master's degree in marketing, management or finance. Send resume and salary requirements to i-flex solutions inc., 99 Park Avenue, 13th Fl., New York, NY 10016, attn: HR Manager. All responses must include job code BS0604.

Systems Analyst/Programmer 3 Wachovia Corp., Charlotte, NC Design, code, test client/server and web business apps. Req's BA in Elect. and Comm. or Comp. Science and 2 yrs exp. in pos. or as Software Eng. or IT Consultant. The 2 yrs. must incl. full lifecycle new appl. dvlp. conversion of specs. into code, testing/ prep. of code for prod.; debugging and correcting existing code; working with Sybase (or similar) in a Unix environ. incl. writing stored procedures, triggers and debugging database code; MS SQL Server; Cognos; PowerBuilder; MS Visual Studio.NET; or similar software for programming M-F, 8-5. Send resume to Meredith Elberson, Wachovia Corp., 401 S. Tryon Street, NC 28258, Charlotte, NC 28288-0475. No phone calls.

Computer Systems Analyst to conduct software application development using ASP, .NET, and Java technologies, and Cognos, Impromptu/PowerPlay; software application support and troubleshooting both for hardware and software servers; configuration and installation of servers; getting data out of Legacy Systems and putting them in Relational database as well as analyzing and trending the data. Requires minimum of Bachelor's degree in Computer Science or related field and 36 months of working experience. Prior working experience with Cognos Impromptu/PowerPlay, Business Case Development, ASP, .NET and Java technologies and strong background in Oracle and SQL Server, 3-D Data reporting (CUBES) is preferred. Some holiday on-call required. Please send resumes to: Chris Jircitano, Vanderbilt University Medical Center, Informatics Center, 8706 The Vanderbilt Clinic, 1301 22nd Avenue North, Nashville, TN 37232-5655.

Systems Analyst sought by large Employer in Electronic Print Services industry. Req's BS in Computer Science or Min 2 yrs prgm exp using HTML, JavaScript, VB, ASP, VB Script, SQL Server 2 yrs exp in M-F 8-5. Responses to Scott Erickson, HR Mgr. Moore Wallace Business Communication Svcs, 630 W. 1000 North, Logan, UT 84321.

Sage IT is looking for IT professionals to develop applications using Cognos Impromptu, PowerPlay, ReportNet, SQL Server, Tera data (NCR), Sybase, Informatica, Data Stage, Ab Initio, Logic/Sphere, JSP, ASP, Min. BS w/ exp. Please contact info@sageinc.com EOE

Digital has long term position for ECU System Analyst and DBA to implement e-commerce Gateway modules in Oracle application; it perform end-to-end EDI implementation (mapping, scrubbing); create database on SQL, use VB, Java, ERP tools. Please email at contact@edc-usa.com EOE.

Software Engineer - System Analysis and Design. Temple Terrace, FL - design and develop business process automation software for large OLTP (On-Line Transaction Processing) system on a client-server architecture using C++, RDBMS, E-SQL, Informix database design and management, cross-platform middleware infrastructure, distributed architecture and UNIX operating system with interprocess communication techniques; investigate and implement methods for improving execution, efficiency, accuracy and performance of corporate production applications; analyze, design, code, test, estimate and implement services required for solutions to customer requirements; identify, recommend and document effective design methodologies and tools to be utilized during design, coding, testing, implementation and maintenance phases. Requires Bachelors in Computer Engineering and either 3 years experience in the job offered or 3 years experience in the development of client-server solutions on large OLTP systems using C++ and RDBMS on UNIX, distributed architecture and application performance tuning. Salary \$72,100/yr, 40 hrs/wk, 8AM-5PM, Mon-Fri. Send resume to Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869, refer to J.O. # FL-2532338.

Software Engineer (in Temple Terrace, FL) to provide 24x7 technical support of critical applications by monitoring Sun and UNIX production servers using patrol monitoring and patrol scripting language; responsible for web server performance analysis and design; network file system layouts; identify tasks requiring automation and apply appropriate processes to each; develop and provide technical designs, capacity planning and architectural solutions on UNIX, Windows NT and TCP/IP protocol; write technical proposals and procedures; conduct presentations and serve as liaison with interfacing organizations; interact with administrators and developers to resolve application issues; increase productivity and plan the future development of software applications. Requires Masters degree in Computer Science and either 2 years experience in the job offered or 2 years experience providing 24x7 technical support of critical applications by monitoring Sun and UNIX production servers using patrol monitoring and patrol scripting language. Salary \$89,000/yr, Mon-Fri, 8AM-5PM, 40 hrs/wk. Send resume to Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869, refer to J.O. # FL-2532346.

Software Engineer Designs, develops, modifies, and implements customized software applications in a large and diverse user environment within a broad framework of standards, policies and procedures in a multiple operating system environment using EJB, J2EE, JDeveloper, Weblogic, Cocobase, Oracle 8i/Rational Rose, RPG400 and related technologies. Develops and directs applications testing procedures and programming. Writes technical documentation. Must have BS or equivalent in CS/CIS Math/Engineering or related. Must have 1 yr. exp. in job offered or in software development with Weblogic, JDeveloper, Cocobase and RPG400. Will accept a combination of education and experience evaluated by a recognized authority as equivalent to a bachelor's degree. Must be willing to be assigned to unanticipated client sites throughout the State of Maine. Salary: \$72,000/yr. Hrs: 9:00am-5:00pm, 40 hrs/wk. Please send 2 copies of resume to: Bureau of Labor Standards, 45 State House Station, Augusta, Maine, 04333-0045. Please refer to Job Order #50555 for Software Engineer.

Software Engineer (in Temple Terrace, FL) to perform circuit-provisioning system design and development using C++, Oracle and J2EE as a UNIX platform; provide conceptual and high-tech solutions to complex business and technical problems; develop and implement standards and verify results; provide technical expertise in operating systems and applications systems in the telecommunications industry; design and develop business process automation systems for the telecommunications industry on client-server architecture using C++, Oracle and J2EE; provide technical solutions to meet documented requirements within schedule; identify, recommend and document effective design methodologies and tools to be utilized during the design, coding, testing, implementation and installation phases. Requires Bachelors in Engineering or Computer Science and either 1 year exp in the job offered or 1 year exp in circuit-provisioning system design and development using C++, Oracle, and J2EE on a UNIX platform. Salary \$64,200/yr, Mon-Fri, 8AM-5PM, 40 hrs/wk. Send resume to Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869, refer to J.O. # FL-2532343.

Software Engineer. Temple Terrace, FL - perform client-server architecture application development using C/C++, CORBA and Informix on a UNIX platform; design and develop business process automation for the telecom industry using cross platform in-house middleware infrastructure that would perform inter-process communication and system calls to define the coordination model along with a configuration management system; provide conceptual architectural solutions to telecom network business needs; provide senior management with design recommendations and alternatives; design and build provisioning and inventory telecom systems; interface and replace existing legacy systems; design coordination between distributed systems helping telecom network operations. Requires Masters in Electronic Engineering or Computer Science and either 3 yrs. experience in the job offered or 3 yrs. experience in client-server architecture application development in the telecom industry using C/C++, CORBA and Informix on a UNIX platform. Salary \$84,800/yr, 40 hrs/wk, 8AM-5PM, Mon-Fri. Send resume to Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869, refer to Job Order #FL-2532351.

The Thalerus Group, a Schaumburg, Illinois Software Engineering Firm is looking for multiple IT professionals with B.S. Degree plus at least 1 yr exp. in XML/XSLT, SQL Server Design/Admin, ASP, Search Engine development and Visual Basic. Send resume to Lillian Yeh (Lillian.yeh@thalerus.com) or The Thalerus Group, 1111 Plaza Drive, Suite 510, Schaumburg, IL 60173.

IT Professionals

Seeking qualified candidates for Sr. & mid-level IT professional positions including: Programmer Analysts, Database Administrators, Software Engineers, IT/Software and similar type positions. Candidates must possess MS/BS or equivalent and/or related work experience. Please mail resume and references to: **Patel Consultants Corp.** Attn: HR 1525 Morris Ave. Union, NJ 07083 EOE

Software Engineer (Temple Terrace, FL) to provide advice to management on complex technical issues and appropriate application of technologies relating to OLTP (on-line transaction processing) software applications development using C++, UNIX, Oracle relational database and Java; design, analyze, estimate and implement solutions requests to ensure solutions meet customer requirements; identify, recommend and document effective design methodologies and tools to utilize during the design, coding, testing and implementation of installation phases. Requires Bachelors in Computer Science and either 5 yrs exp in job offered or 5 yrs exp in OLTP software application development using C++, UNIX and Oracle. Salary \$77,300/yr, Mon-Fri, 8AM-5PM, 40 hrs/wk. Send resume to Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869, refer to J.O. # FL-253118.

SOFTWARE ENGINEER to design, develop, configure, troubleshoot and customize various PeopleSoft modules, including GL, AM, AP, AR, EX, PC and CA, using PeopleSoft Financials, BPM, PeopleTools and MS SQL Server while successfully adhering to company's project life cycle process. Require: M.S. degree in Computer Science/Engineering, Info. Systems, or a closely related field with 2 yrs of experience in the job offered or as a Programmer/Analyst. Extensive travel on assignments to various client sites within the U.S. is required. Competitive salary offered. Apply by resume to: Rajender Gaddam, Director of HR, Orpine Enterprises, LLC, 1004 Crooked Creek Court, Mableton, GA 30126; Attn: Job HS.



NEED TO HIRE FAST?
START HERE FIRST!
IT Careers and itcareers.com reach more than 2/3 of all US IT professionals every week. If you need to hire top talent, start by hiring us.

Check us out at:
www.itcareers.com
or
call (800) 762-2977

WE DO A BETTER JOB AT



HELPING YOU GET ONE!

Search our jobs database and post your resume on www.itcareers.com!



enterprise integration
network vulnerabilities
corporate data security
government compliance
mobile & wireless security
business management needs

The right IT professional

can jump the hurdles of
today's IT challenges.

Call:

(800) 762-2977

Software Engineer (Temple Terrace, FL) - Design, develop, and implement applications and systems for telecommunications industry by programming mainframe applications using COBOL, MVS and JCL (Job Control Language) and using client/server programs including UNIX, C++, Informatica, and PERL; design, develop, and test data processing service request for carrier access billing system and environment. Requires Bachelors in Computer Information Systems or Management Information Systems and either 4 yrs exp in job offered or 4 yrs exp in programming mainframe applications using COBOL and JCL with experience to include 6 months designing and implementing applications for telecom industry using client server programs. Salary \$62,100/yr. Mon-Fri, 8AM-5PM, 40 hrs/wk. Send resume to Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869, refer to J.O. # FL-2530520.

Systems Analyst Analyzes, tests, modifies, and maintains computer programs or systems using Oracle, VB or Java, and related technologies in UNIX, VMS and NT platforms. Formulates program and system design procedures, test plans, and program development specifications. Prepares technical documentation. Must have BS or equivalent in CS/Math/Engineering or related. Must have 2 yrs exp. in job offered or in Software design, development & integration using Oracle and VB. Will accept a credential evaluation by a recognized authority as equivalent to a bachelor's degree. Must be willing to be assigned to unanticipated client sites throughout the United States. Salary \$60,000/yr. Hrs: 8:00am-5:00pm, 40/wk. Please send 2 copies of resume to: Case No. 200300938, Division of Career Services, Labor Certification Unit, 19 Stanford St., 1st Fl, Boston, MA 02114.

Positions are available in Columbus, Ohio for Software Developers with a company that develops software solutions for the healthcare industry. The Software Developers will work under direct supervision to develop, program, and test applications for hospital billing systems and assist with modifications. Candidates for this position should possess a Bachelor's degree in Computer Science, Life Sciences with Computer Science concentration, or a computer field and at least 6 months' experience in computer programming, and demonstrated knowledge of C++ or C# and one of the following, JAVA, Oracle, or Access.

Apply with resume by mail to: Mr. Maria Dress, Per-Se Technologies, Inc., 26777 Lorain Road, Suite 304, North Olmsted, Ohio 44070

Select Source International has opportunities for Computer Programmers, Programmer Analysts, Systems Analysts, Software Engineers, DBAs and Software Consultants with exp. in two or more of the following skills: COB, SQL, PL/SQL, Java, J2EE, WSA, Unix, DB2, MVS, CICS, COBOL, Visual Basic, C++, C#, Oracle, Sybase, Crystal Reports, JavaScript, HTML, DHTML, JSP, ASP, .NET, RETEX RMS & RDM, BS or MS depending on position. 1yr exp reqd depending on position. We also accept the foreign edu. equiv. or any suitable comb. of edu., training or exp. Frequent travel & relocation. Send resume and salary reqmts to: Select Source International 10501 Wayzata Blvd, Ste 200, Minneapolis, MN 55305. Visit our website at www.SSCI.com.

SQL Server Database Administrator Developer For various unanticipated client locations throughout the U.S. Provides support for the client's financial database; Makes enhancements to interfaces using Visual Basic and SQL Server. Requires a bachelor's degree or foreign equivalent in Com. Science, Engineering, Com. Engineer, Info. Systems or related field and three years of experience in the field such as software consultant, programmer/analyst, etc. Annual salary \$81,120. Submit resume or C.V. to: PA CareerLink, F.L.C. Unit, 235 W. Chellen Avenue, Philadelphia, PA 19144. Job order number WEB 431234.

Systems Engineer, Temple Terrace, FL - Develop applications using C++, Informatica database, CORBA and J2EE technologies in a telecom domain for DSL, loop qualification and IPVPN (internet protocol voice over land virtual private network); responsible for providing system solutions for broadband technologies; develop and maintain automated broadband provisioning systems; client server architecture; provide management with system design recommendations in conformance with guidelines and coordinate implementation of design. Requires Bachelors in Electrical Engineering or Computer Science and either 3 yrs. Exp. in the job offered or 3 yrs. Exp. in application development using C++, Informatica database, CORBA and J2EE technologies in a telecom domain for DSL, loop qualification and IPVPN. Salary \$75,000/yr, 40 hrs/week, 8 AM to 5 PM, Mon-Fri. Send resume to Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869, refer to Job Order #FL-2531856.

Application Developer Software analysis & development for management information systems. Web-based development, technical documentation & support. Tech environment: .NET Technology; Visual Basic; VB.NET; ASP.NET; Crystal Reports; SQL Server; JavaScript; HTML. Bachelor's in Comp. Sci. + 6 ms. exp. in job offered or as Programmer or Student Application Programmer req'd. Education must include 1 project each in .NET Technology & JavaScript, 40 hrs/wk, 8:30am-6pm, \$48,000/yr. Job location: Boca Raton, FL. Must have proof of legal authority to work in the U.S. Submit resume to Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869. RE: JO#FL 2531718. Employer ad.

Verion Technology Solutions Ltd. is looking for the following personnel: Software Engineers/Programmer Analysts/Management Analysts 3) QA Analysts: Should have a Bachelor's Degree in Computer Science/related field with 3 years experience in any 2 of the following: Java, XML, J2EE, EJB, Rational Rose, WinRunner, LoadRunner, TestDirector, C++, EJB, Siebel, Lotus Notes, Informatica, DataStage, Abinitio and Cognos. We offer competitive salary and benefits. Mail Resume to Human Resources, Verion Technology Solutions Ltd, 825 E Rand Road, Suite 2010, Arlington Heights, IL 60004.

Programmer Analyst - Conesco Services, LLC, Carmel, Indiana, has positions for programmer analysts to plan, develop, test, and document computer programs applying knowledge of program techniques and computer systems; provide expertise to programmer analysts in the U.S. and India for programming projects being executed in India for U.S. customers; interface with marketing managers and support marketing initiatives by preparing the required materials and presentations; perform and provide expertise to analysts in coding, testing, validation, and code installation as well as provide maintenance and support of software applications; communicate between transborder operations; configuration management of program changes by customer, and update existing and develop new training modules for programmers and analysts. Candidates must have a bachelor's degree in computer science or a related field. Candidates must be authorized to work permanently in the United States. Please direct resumes to: Bernard Hodas, Group Rep. Service, #83152, 8440 Woodfield Crossing, Suite 200, Indianapolis, IN 46240. No phone calls, please. An equal opportunity employer.

Oracle Data Warehouse Engineer Perform application analysis, design, development, testing and support in client server, multi-tier architecture and database applications on Unix and Windows Platforms. Work primarily on Data Warehouse and Enterprise Applications on Oracle and Windows Platforms. SQL, Java, XML, Oracle Developer 2000 (Forms and Reports), Discoverer, Designer, ETL, Informatica and BI tools such as Business Objects. Perform database tuning and application tuning and develop procedures using PL/SQL and Shell on Oracle and Unix. Req. Bachelor Degree in Computer Science, Engineering or related field and two yrs experience performing application design/development on data warehouse and enterprise application using Oracle RDBMS, PL/SQL, Forms, Reports, ETL, Informatica, BI Business Objects, database tuning, Oracle Applications Modules and Shell Scripts on Unix and Windows. If no degree or unrelated degree will accept applicants with three years of college level education and three years of application design and development experience of which two years is the specific experience stated above. Job Location: will work at various client sites throughout the U.S. as assigned by employer. Salary: \$70,000/yr. Send two copies of resume/letter of application to: Job Order #2004-920, P.O. Box 989, Concord, NH 03302-0989.

Software Engineer (in Temple Terrace, FL) to design and develop automated work assignment and tracking software packages using C and C++ in a Windows and UNIX environment; develop applications using client/server architecture, object-oriented system design and programming; UNIX and Windows platforms, algorithm design and implementation; perform network and internet software development; identify, recommend and document effective design methodologies and tools for the design, coding, testing, implementation and installation of software packages using C and C++ in a Windows and UNIX environment. Salary \$62,000/yr, Mon-Fri, 8AM-5PM, 40 hrs/wk. Send resume to Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869, refer to J.O. # FL-2531408.

Software Engineer, Temple Terrace, FL - design and develop security and reports web infrastructure using Java server pages and servlets; in support mission architecture; design cross-browser based web graphical user interface using scripting language; develop interface to supplier gateway and billing system using C++, CORBA, Java and Oracle on a Unix platform; a multi-tier architecture; develop auxiliary libraries using Oracle Call Interface to access Oracle database; design database structure and application servers in C++ to access database; develop Java swing based client screens; provide advice to management on complex technical issues and appropriate application of technology relating to database management, operating systems, business modeling, object oriented design, system performance and data resource management. Requires Masters in Computer Science or Computer Engineering and either 2 yrs experience in the job offered or 2 yrs experience in software development for the web using C++, CORBA, Java and Oracle on a UNIX platform. Salary \$78,000/yr, 40 hrs/week, 8AM-5PM, Mon-Fri, 8AM-5PM, 40 hrs/wk. Send resume to Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869, refer to Job Order #FL-2532334.

Programmer Analyst (IBM Mainframe) - Multiple Openings Structured systems analysis, design, development, testing, quality assurance, implementation, integration, maintenance, support and conversion of large volume batch transaction processing and batch application systems in a multi-hardware multi-software environment over centralized database systems using relational/hierarchical/network database management systems, Third Generation Languages (3GLs), Fourth Generation Languages (4GLs), CASE tools and Transaction Processing Software. Bachelor's Degree (or equivalent) in Computer Science/Math/Engineering/Science/Business-Commerce and 1 yr experience in job offered or as Software Engineer/Systems Analyst are required. Must have appropriate combination of skills as follows: 1 of A and 1 of B and 1 of C, or 1 of A and 1 of B and 1 of C and 1 of D. A includes DB2, IMS DB and IMS DB; B includes CICS, ADO/ADOX, VSAAM and MF-Workbench; and C includes TELON, REF, ADW, CSP and APS. High mobility preferred. 40 hrs/week, 8 am - 5 pm, \$66,533 - \$74,000 per year. Qualified applicants should contact or send resume to: BECS/CareerLink, Program Supervisor, Indiana County CareerLink, 300 Indian Springs Road, Indiana, PA 15701. Refer to Job Order # WEE 433178.

Software Engineer - Systems Analysis & Programming (Temple Terrace, FL) to lead site design and development of telecommunications software system solutions relating to complex architectural and design issues; analyze software requirements and define target architecture by translating user requirements into processes into detailed algorithmic decisions for implementation by software engineers and internet software personnel; develop and direct to develop software programs used in the telecommunications industry using various programming languages including Java, C, C++, HTML, Oracle, and XML; running under multiple platforms and operating systems including UNIX, Windows, and Linux. Requires Masters in Computer Science, plus either 1 year exp in job offered or 1 year exp in telecommunications software development using C++, Oracle, Java and HTML. Salary \$92,100/yr, 40 hrs/week, 8AM-5PM, 40 hrs/wk. Send resume to Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869, refer to J.O. # FL-2531141.

This index is provided as an informational service. The publisher does not assume any liability for errors or omissions.

FRANK HAYES ■ FRANKLY SPEAKING

Mail Mishap

YOU'VE GOT TO FEEL FOR TOM WHITTINGTON. The CIO of California's Contra Costa County, across the bay from San Francisco, just found out that copies of hundreds of internal e-mail messages containing financial data and private employee information have been inadvertently sent to a Swedish company over the past two years (see story, page 1).

It's not as if Whittington sat on his hands, ignoring the problem. He didn't know about the address book glitch that caused it. There was no indication of anything being wrong. He was blindsided.

Was there *anything* he could have done?

Not that I can see. Or at least, not without the kind of unlimited budget that doesn't exist in any real-world IT organization, much less in a government IT shop at the county level.

Actually, Whittington was comparatively lucky. The e-mails, many of which were stuffed with financial and personal data, were intended for someone in the county auditor's office. Instead, they ended up at Ord&Bild, a Swedish Internet company. And after they started arriving there, Ord&Bild repeatedly sent messages to tell senders of the wayward e-mails about the problem, according to Ord&Bild managing director Robert Carlesten.

But those messages got no response. And nobody told Whittington about the messages. He didn't learn about the problem until Carlesten contacted *Computerworld* reporter Dan Verton, who called Whittington.

Whittington was lucky that the data was kept confidential and not put to some malicious use. But he would have been a lot luckier if there hadn't been any wayward e-mails in the first place.

But what could he have done to prevent it? What can he do to keep it from happening again? That's what Whittington and his staff are trying to figure out now. None of the obvious options are very good.

Cut off the e-mail system from the rest of the Internet? That would protect the data, but then residents couldn't use e-mail to communicate with their government.

Put in two parallel e-mail systems — one for internal messages and another for e-mail going to the outside world? That's a huge kludge for users to navigate.

Install outgoing-mail whitelists (which specify legal destination addresses) or blacklists (which list addresses that mail won't be delivered to)? That's impractical — whitelists are too restrictive, and blacklists can never be comprehensive.

Eliminate address books from county users' machines so they have to type addresses manually? That would have avoided the glitch that caused the misdirected e-mails: a garbled address in one user's address book. But it would generate many more mistyped addresses.

Set IT staffers to work poring over outgoing e-mail logs, looking for potentially inappropriate destination addresses? That would be spectacularly labor-intensive and would generate huge numbers of false positives to investigate. And how would they know what to look for, anyway?

The perfect solution might be to somehow tag sensitive data so it could be automatically blocked at the firewall. That would only require rebuilding all the county's systems from the ground up, embedding tags in all the data and then customizing the e-mail system to make sure the tags don't get removed. Good luck getting the budget for that past the county board.

Whittington's team is still investigating what happened and what to do next. Whittington himself hopes better training for users and clearer policies about attaching data to e-mails will help.

Think there's a better way? Whittington would like to hear it. So would the rest of us.

Because what happened to Tom Whittington and Contra Costa County is just waiting to happen to every other organization. And the next one the problem hits may not be so lucky. **48030**



FRANK HAYES, *Computerworld's* senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

Not What We Had in Mind

It's the 1990s, and this training director pilot fish orders a PC so his office can be the last one finally connected to the LAN. "Because of the way purchasing worked, I had separate requests for a computer system and a printer," fish says. "It was like Christmas morning the day I saw the printer box in the office. The feeling didn't last long, however. My boss, the HR manager, approved the purchase of the printer — but denied the request for a computer."

Oops!

This VP demands a high-end PC to show his tech-



tor at the help desk told them to just shut off the computer

savviness. But he never actually turns it on, so support techs start using it as a supply dump, swapping out the VP's working components for items that break on other users' PCs. "A year later, he was let go," says IT director pilot fish. "New VP comes in and on the first day attempts to fire up the computer. I had to go over to explain what my staff had done. It got quite a chuckle out of everyone — and a new desktop was ordered."

What a Surprise

User explains to support pilot fish that her CD-ROM drive was sticking so she sprayed it with WD-40. What? says astonished fish. You sprayed WD-40 into the CD-ROM drive? "Oh yes," user says. "But that hasn't fixed it."

Communication!

This site's sysadmins decide to install an operating system service pack across the network — but they don't tell users or the help desk. As the update slowly installs itself, users get impatient and call for help. "The opera-

tor by holding the power button in for a few seconds," groans IT pilot fish on the scene. "Around 100 machines were powered off during the installation and wouldn't reboot. Techs had to go to every office to get them running again."

And the Problem Is What, Exactly?

Support pilot fish spots a help desk ticket he's glad he doesn't have to handle: "Floppy drive unable to read CD-ROM. Please fix ASAP!"

Yeah, That'll Help

Network admin pilot fish is setting up a new laptop when it picks up a wireless connection — which turns out to be from another company in the office complex. "I head over to give them a heads-up that they're broadcasting in the clear, with no authentication required," fish says. On the CIO's desk fish spots the wireless router, and he explains that, by using it, anyone can access the CIO's network. "OK," CIO says agreeably. "I'll turn down the power."

TURN IT UP FOR SHARKY. Send your true tale of IT life to sharky@computerworld.com. You get a sharp Shark shirt if I use it. And check out the daily feed, browse the Sharkies and sign up for Shark Tank home delivery at computerworld.com/sharky.

Time Is Running Out!

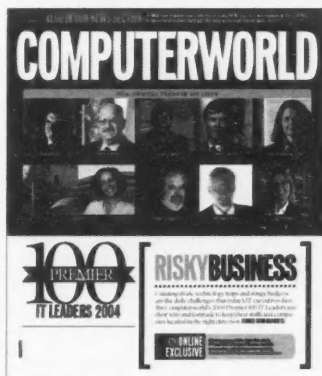
COMPUTERWORLD
100
PREMIER
IT LEADERS 2005

Nominate an outstanding IT leader for Computerworld's Premier 100 IT Leaders 2005 Awards program



EACH YEAR, Computerworld editors conduct a nationwide search for IT managers and executives who show technology leadership in their organizations. This prestigious awards program recognizes and honors IT professionals from a wide range of industries, drawing attention to the

innovative, business-critical work they do.



ELIGIBLE NOMINEES include CIOs, CTOs, vice presidents, IT directors and managers from user companies, nonprofits, the computer industry and the private sector.

HONOREES will be announced in Computerworld's Jan. 3, 2005, issue and will be our guests at the 6th Annual Premier 100 IT Leaders Conference, March 6-8, 2005, in Scottsdale, Ariz.

Who Qualifies?

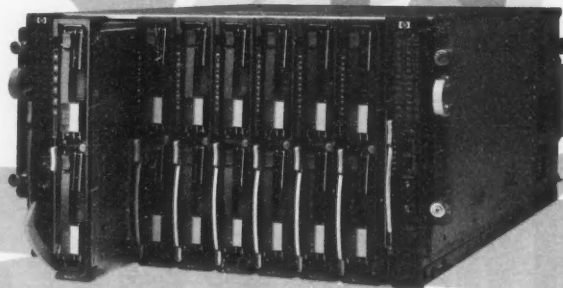
IT managers and executives who

- Effectively manage IT and business strategies
- Envision innovative approaches to business problems
- Foster great ideas and creative work environments
- Excel at vendor and supplier management
- Take calculated risks and learn from failure

Deadline has been extended to July 30!

Go online to nominate an IT leader at computerworld.com/p100nominations or QuickLink a3420.

Questions? Contact us by e-mail at premier100@computerworld.com.

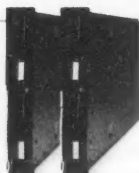


HP Blades, now in a bundle, which is exactly what you'll save.

Save over 30% with our blade bundle featuring two HP ProLiant BL20p Blade Servers, powered by Intel® Xeon™ processors, and get the power to make network management simple and affordable. You'll save on deployment time too, thanks to this ready-to-go package. Sure, modular design leaves room to expand later, but HP Blade Servers can also make a big impact on your total cost of ownership in the meantime. Our management software boosts productivity and cuts reconfiguration efforts from days to minutes. And because your time is money, the BL20p features fully redundant technologies to reduce costly downtime. While our #1 ranking in Intel®-based, server-customer satisfaction is one reason we recently became the first to sell over 100,000 blade servers, there's more than one reason. You also get the advice and support of HP and our local partners—well before and long after you buy. Even when you buy at more than 30% off.

Save 33%

Get the HP ProLiant BL20p bundle, and you'll save big compared to the cost of buying the two servers and accessories separately.



HP PROLIANT BL20p BLADE SERVER BUNDLE

\$8,999

Lease for as low as
\$375 a month*

- (2) BL20p Blade Servers
- Each Blade Server includes:
 - (2) Intel® Xeon™ processors 3.06GHz-512k
 - (3) 10/100/1000 NICs + (1) 10/100 iLO NIC
 - 1GB DDR memory†
- p-Class blade enclosure
- p-Class single phase power enclosure with 2 power supplies
- Mini bus bar kit
- (8) Rapid Deployment Pack licenses



Download information about HP Blade servers.
Read a white paper highlighting total cost of ownership and the Factiva and iSource case studies demonstrating ROI.

CALL

1-877-726-8116

CLICK

hp.com/go/blades4

VISIT

your local HP reseller



Offer available when bought direct from HP or from participating authorized resellers. Prices shown are HP direct prices; reseller and retailer prices may vary. Prices shown are subject to change and do not include applicable state and local sales taxes or shipping to recipient's destination. HP is not liable for editorial, pictorial or typographical errors in this advertisement. Photography may not accurately represent exact configurations priced. Offers cannot be combined with any other offer or discount and are good while supplies last. Limited order quantities. Promotions void where prohibited or restricted by law. *Implicit lease rate, assuming lessee does not exercise a fair-market-value purchase option at the end of the lease term and timely returns the leased equipment to Hewlett-Packard Financial Services Corporation (HPFSC) at the end of the lease term and disregarding any charges payable by lessee other than rent payments (such as taxes, fees and shipping charges). Lease products available through HPFSC to qualified commercial customers in the U.S. and subject to credit approval and execution of standard HPFSC documentation. Other restrictions may apply. HPFSC reserves the right to change or cancel this program at any time without notice. For more information, call 1-888-277-5942. †For hard drives, GB=million bytes. Certain warranty restrictions and exclusions may apply. For complete warranty details, call 1-800-345-1518 (U.S.). Intel, Intel Inside, the Intel Inside Logo and Intel Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. ©2004 Hewlett-Packard Development Company, L.P.

